NEW YORK • LONDON

WORLD PETROLEUM

Tax Evasion a Growing Evil • Petroleum Industry Needs World Cooperation • The Texas Corporation—A Youthful Giant • Can Overproduction Be Ended by Martial Law? • Fighting Price Cutters With a Third Grade • Electrifying Gulf's Maracaibo Oil Fields

SEPTEMBER • 1931

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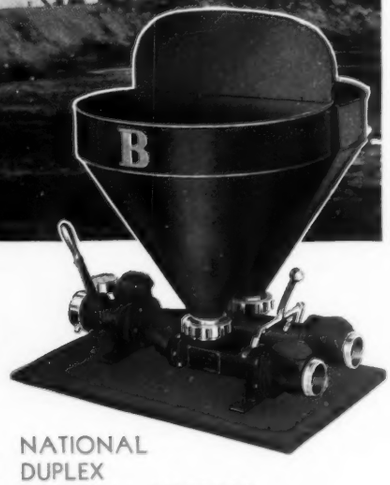

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WORLD PETROLEUM

(Incorporating "Petroleum Equipment Exporter")

VOLUME II NUMBER 9

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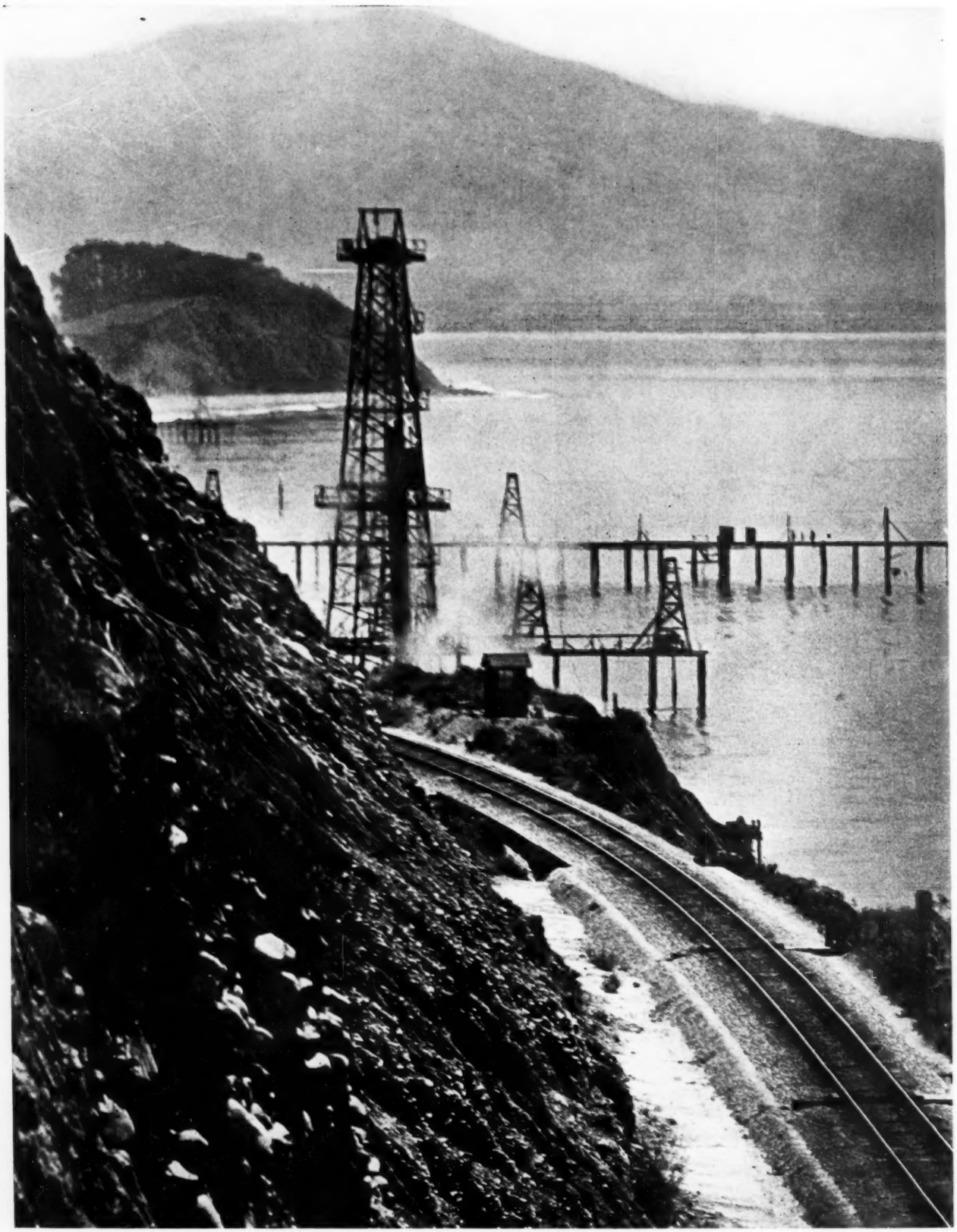

The "Liquid Gold" Coast—California Will Connell

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PETROLEUM

Conservation by Bayonet

CONSERVATION at the point of the bayonet has won at least a temporary victory in Oklahoma and East Texas. When Governor "Alfalfa Bill" Murray of the former State issued his proclamation suspending production he announced that the lid would remain on until the price of crude reached $1 per barrel. Governor Sterling of Texas, lacking the breadth of authority enjoyed by the executive of his neighboring state, justified his action in calling upon the State guard and the famous Texas Rangers to close down East Texas wells on the ground that public order was threatened in the district.

Use of the military, involving as it does serious interference with the personal liberties and activities of individuals, is not a practice to be lightly advocated. It must be admitted, however, that the method has been successful, temporarily at least, in raising the price of crude oil and gasoline in the territory affected. Shutting down the heavy flow of East Texas oil, following the suspension of activity in the Oklahoma field and in two Kansas pools, forced the refineries depending upon these fields for their raw supplies to draw upon stored crude, stocks of which have been materially reduced. On August 24 the price of $1 per barrel was posted by two companies in the Oklahoma field and this example has been followed by others.

Should the law recently enacted by the Texas legislature conferring authority upon a State commission to limit production and prorate the output of individual wells prove workable, it is possible that the recent dramatic episode may prove to be the turning point for prices and production and the action of the two Governers may have a constructive influence notwithstanding the questionable means employed.

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"Fighting Gas"

HOW to counteract the operations of habitual price cutters has become a burning question in the gasoline trade of many sections of the United States. The latest answer to be proposed is the sale by legitimate marketing organizations of a third grade or "fighting grade" of gasoline which is offered to the public at the same rate as that maintained by the price cutters without interfering with the quality or selling price of standard brands. The third pump has spread rapidly among the larger oil companies and has become a factor of unquestioned importance in current marketing.

Upholders of the third pump plan insist that it offers the only practical means of meeting the price cutter on his own ground since it cuts down his gallonage and renders it difficult to maintain the high volume on which his hope of profit must depend. Critics assert that it aggravates the evils of overproduction, tends to destroy the effect of long continued efforts to establish brands representing high quality and adds to market demoralization at a time when the great need is to promote stability. Whatever the merits of these arguments the fact remains that for the present the third grade is an exceedingly live issue and a marketing factor of growing importance. Its effects are being carefully watched by oil company executives and the members of their sales organizations.

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Progressive Corporation

IN the series of articles dealing with the organization and operation of great international oil companies WORLD PETROLEUM presents this month a study of The Texas Corporation, which in the relatively brief period of thirty years has risen from the position of a small local company engaged in the storage and piping of Texas oil to a great integrated organization producing, refining, transporting and marketing petroleum and its products in every state of the American Union and in 51 countries in all quarters of the globe.

The life story of a corporation such as this teems with the romance of industry and with high adventure in the realms of commerce as much as does the biography of any self made business man. There is something typically American in the story of The Texas Corporation, in the vision and daring with which the men who formed it embarked upon a policy of expansion undeterred by slender capital resources, extended their operations to countries in which not even the name of the company was known and entered the lists in competition with organizations far better equipped with all the visible armor of commercial strength. In studying the record of its early days one unescapable impression is that the best weapon of the men who directed The Texas Corporation was the strong

confidence of youth which counts not the odds, but asks only an open field and a fair fight.

To appreciate the difficulties which the company had to overcome it is necessary to recall the low repute in which Texas crude was held in the early days. With its heavy base and low yield of gasoline it was looked upon as worthless for refining, and at a time when all standards in the American industry were based upon the product of the Pennsylvania fields the output of the Gulf Coast wells had a hard road to travel to gain recognition in the trade. In a way this perhaps was fortunate for the development of The Texas Corporation, since it led to an intensive cultivation of world markets.

At a time when the conflict is still on between the old idea of business as a struggle for the survival of the strongest, and the newer concept which seeks to promote stability and trade equality through industrial cooperation in the avoidance of destructive competition and the maintenance of fair practices, it is noteworthy that the leaders of The Texas Corporation always have marched under the banner of the more constructive thought. They have consistently supported the oil conservation program in the United States, have accepted proration wherever it has been proposed in their producing territories and have upheld the Institute organized to establish fair practices in the petroleum industry. And since the character of a great business organization, like that of an army, inevitably partakes something of the spirit of the man who leads it, a single personal incident may be in place here. In a discussion with the able chief executive of the company, Ralph C. Holmes, the writer asked him of what achievement of the company he felt most proud. The answer was simple and significant. "The one thing in the record of The Texas Corporation in which I feel the greatest pride," said Mr. Holmes, "is that nobody in its employ ever has been asked or permitted to do an unfair act."

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World Cooperation

ON other pages of this issue J. B. Aug. Kessler, well-known executive of the Royal Dutch-Shell group, expresses with great clarity of thought and with the support of convincing facts and figures the futility of attempting to achieve stabilization in the oil industry through the independent efforts of individual countries or producing districts. His article is a convincing argument for world understanding and world cooperation in solving the problems of oil production and distribution. Undoubtedly the perusal of his analysis of the existing situation will stimulate some serious thinking on the part of oil company executives; but his plea for leadership by oil men of the United States in bringing about a more satisfactory state of affairs is likely to remain unanswered until some change in the so-called anti-trust laws of the United States removes from the minds of business men the fear of prosecution if they engage in an effort to bring about international, or even national, cooperation in the direction of an orderly regulation of industrial activities.

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A Doubtful Adventure

HENRY L. DOHERTY, stormy petrel of America's petroleum world, has again become the subject of widespread publicity. This time he has permitted himself to be drawn into a fight with the Kansas City Star, a powerful newspaper of the mid-western United States. We are accustomed to Mr. Doherty's originality, vigor and temper and have long cherished an admiration for the vivacious way in which he has displayed them. In this particular fight, however, we feel that he is distinguishing himself more by his ardour than by sound judgment.

When the Kansas City Star launched a campaign to lower the gas rates of Cities Service Company in that section and the state banking commissioner barred the sale of all but one class of Cities Service stock in the state of Kansas, Mr. Doherty acted with characteristic promptness and vigor. He launched a $12,000,000 libel suit, telegraphed the Postmaster General demanding that the Star be barred from the mails and asked the trustees of the estate formerly controlling the newspaper to remove the present management. As a means of bringing the Star to book and getting his case before the public Mr. Doherty has just bought a half interest in the rival Kansas City Journal-Post.

All these steps were taken with Mr. Doherty's characteristic openness, which certainly moderates their adverse affect on the public mind. The fact remains, however, that the extreme nature of his steps imperils the success of his cause.

For some years Mr. Doherty has been in the habit of buying paid space in the newspapers to set forth boldly his original views—a course we consider sound, praiseworthy and effective. We predict he will find his position as a newspaper proprietor highly vulnerable and that the editorial pronouncements of his own newspaper will be less effective than his old advertising broadsides.

Professional politicians and healthy inpecunious young men with nothing at stake may perhaps be able to afford the price of violent controversy. Middle aged directors of far flung enterprises may well take the advice of the Editor and Publisher, the newspaper man's trade journal: "The greater the power the greater the need of broad, tolerant and just methods."

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Looking Ahead

"IN a few years we shall probably see a preponderance of Diesel vehicles on the roads and in the air, which will mean a serious alteration in the value of refinery products," says Dr. A. E. Dunstan, chief chemist of the Anglo-Persian Oil Company, who also expresses the view that a few years will see gasoline ousted from the premier position that it has held so long. Unquestionably the Diesel engine will quickly make vast strides in the air and on land with commercial vehicles and other industrial uses as it has on water, now that most of the engineering difficulties attendant upon high revolution and small cylinders have been overcome. Nevertheless it is doubtful if this form of power soon will extend to private motorcars in any substantial volume. The annual fuel-bill saving would not justify the step, even if the engine construction cost could be brought down to the level of the gasoline power plant, apart from the fact that cleanliness of the lighter fuel is a consideration with users.

Transportation, marketing and taxes together form the greatest part of the retail price of any form of fuel for automobiles, particularly with the common system of selling small quantities at the roadside pump. Immediately it became necesssary to distribute Diesel fuel in a similar manner its retail price would rise, and taxes would also be imposed, leaving little opportunity for benefit to the motorist. If oil burners replace coal in the majority of homes for heating, and the demand for gas oil becomes sufficiently widespread to enable deliveries to be made economically to individual car owners, this obstacle may be overcome. On the other hand, rapid adoption of Diesel engines may be expected for railroads, bus and truck services where bulk deliveries are possible and appreciable fuel economies are involved.

Gasoline Tax Evasion a Growing Evil in U. S.

LACK of uniformity in State laws regulating the sale of petroleum products, combined with lax enforcement of these multiplying statutes, has introduced into gasoline marketing in the United States a new problem that is rapidly assuming threatening dimensions. This is the wholesale evasion of tax laws in various parts of the country. That the volume of "bootleg" gasoline has increased tremendously within the past year and a half is the judgment of those who have investigated the subject. One reason apparently is that the inducement to evade payment has also grown through advances in the rate of taxation made by many States.

State legislatures seeking ways of providing additional revenue have found the imposition of heavier taxes on gasoline an easy and effective means of achieving their object, and the majority of the States have revised their taxes upward within the past two years. Since the selling price of gasoline has been declining throughout this period consumers have not felt the additional charges as a serious burden. At the present time taxes ranging from two to seven cents per gallon are imposed by different States with the average nearly four cents. In the greater part of the country State taxes now represent from 40 to 90 percent of Group 3 tank car prices.

When the avoidance of tax payments means a reduction of 50 percent or more in the cost of gasoline to the retailer, it is obvious that the temptation to evasion becomes extremely strong in the case of dishonest and irresponsible dealers. Since the large distributing companies and those with reputations at stake will not attempt to avoid tax payments, nor permit dealers under their control to do so, the bootlegger acquires a tremendous sales advantage from the nonpayment of taxes as he is enabled to undersell the honest dealer by three to four cents a gallon and still retain a full profit margin. Wherever the tax dodger sets up his stand the contagion of his example is likely to spread. Competitors who might prefer to follow a law abiding course feel themselves forced to adopt his methods in order to remain in business. The result is that in certain sections a large part of the total gallonage is handled by men who contrive in one way or another to beat the law.

Investigations conducted by some of the larger oil companies strikingly reveal the operation of this influence. They show that while tax evasion is relatively rare in certain parts of the country, there are sore spots where it has become a very serious evil and where States are losing millions of dollars yearly in revenue while honest dealers are being driven out of business and law abiding companies are being subjected to the most ruinous form of unfair competition. The district of which Chicago is the centre, including northern Illinois and Indiana, a large part of Oklahoma and parts of Texas are mentioned among marketing areas in which tax law violations have become notorious.

The ways in which the tax dodgers operate are varied and ingenious. Although State laws universally require dealers to obtain licenses in order to do business the machinery of law enforcement is everywhere inadequate. The number of inspectors is insufficient and they are subject to little supervision. As a consequence sellers often operate without a license in defiance of the law and such dealers have little compunction about handling bootleg gas. In some instances, irresponsible companies are formed, which follow the simple expedient of withholding payment of the tax. When the State authorities attempt to force collection they find that operators have disappeared and that there is nothing on which they can levy. In some States exemption from the tax is provided in certain cases, as where gasoline is used for the operation of farm tractors. This opens another road to evasion through false claims of exemption.

In some sections of the country the distribution of bootleg gasoline is a large and well organized business. Where proximity to State borders makes it easy to operate across these boundary lines a favorite plan is to move gasoline by tank car or tank wagon from one State to another, exemption being claimed in the State where the gasoline is purchased and its sale not being reported in the State where it is purveyed to consumers. Shipments designated for points outside the State of origin sometimes are diverted after starting on their journey, and ultimately reach consumers at more or less distant points without ever crossing State lines.

Dishonest dealers who do not attempt to evade payment of the tax entirely find a means of reducing it by mixing kerosene and distillates with highly volatile gas, thus providing themselves with a volume two or three times as great as that which they declare for tax purposes. In these cases a fraud is perpetrated upon consumers as well as upon the State.

So widespread has the evil become that some of the largest oil companies in the country are making a careful study to determine how this menace to legitimate marketing operations can be met and eliminated.

WITH 48 States acting independently in taxing and regulating the sale of gasoline and with inadequate machinery for the enforcement of these varying laws a fertile field for tax evasion has been found in the United States. This field has been cultivated so industriously by violators of the laws that tax avoidance and other illegal practices have become a crying evil in many states, depriving State treasuries of revenue due them and directly encouraging price cutting among dealers who have access to untaxed gas. So serious is the situation in and about Chicago that a committee of oil men has been formed to cooperate with State authorities in bringing the tax dodgers to book. The situation in regard to tax evasion and the means adopted to cope with it forms the subject of this and succeeding articles.

Portrait study of the President of The Texas Corporation made for World Petroleum by Blank and Stoller

RALPH C. HOLMES, at the head of the highly efficient organization of The Texas Corporation, typifies the characteristics and business ideals of the company to a noteworthy degree. Born in Sharon Center, Pennsylvania, in 1874 and educated at Olean, New York, Mr. Holmes grew up in a section where the smell of oil was in the air and where the industry has its most significant historic background.

In 1895 he entered the employ of the Standard Oil Company of New York at Olean and laid the groundwork of his knowledge of refining there. Later he went to the Solar Refining Company at Galatea, Ohio. When The Texas Company was organized in 1902 he joined it as manager of the refining department. The story of his business career is the story of Texaco's rise to international greatness. Indeed, the remarkable efficiency of The Texas Company as a refiner is due in no small part to Mr. Holmes. In conjunction with his associates he developed the Holmes-Manley cracking process which greatly increased the recovery of gasoline per unit of crude and the daily capacity of refining units. Through this and other improvements which he introduced his reputation as a refiner of outstanding ability was long since established.

In another respect, however, Mr. Holmes's record is unusual for it presents the spectacle of a man of high technical ability who has attained equal distinction as a business executive. A director of the company since 1906 he became a vice president and chairman of the manufacturing and marketing committee in 1913. In 1920 he was placed on the executive committee. Since 1926 he has been the chief executive of The Texas Corporation, directing the destinies of its world wide organization in a period that has proved a particularly difficult one for international oil companies. In addition to these heavy responsibilities he has found time to devote to public service on behalf of the industry. During the world war he was chairman of the sub-committee on refining of the National Petroleum War Service and was a member of the Priorities Committee on Refinery Materials. He has been a director of the American Petroleum Institute for several years, and has been a leader in the movement for American oil conservation.

The Texas Corporation—A Youthful Giant

Originating in the Beaumont Oil Rush of 1901, a Local Company Formed to Store and Transport Texas Crude Has Grown to a Vast International Organization.

By E. W. Mayo

IN January, 1901, a human cyclone struck the sleepy little town of Beaumont, Texas. It was as wild and unmanageable as any twister that ever tore across the southwestern plains and left as much wreckage in its wake. It was started by the news that Captain A. F. Lucas, who had been drilling for oil on Spindletop, a small elevation in the prairie three miles southeast of the town, had struck a gusher, a marvellous well that flowed 50,000 bbl. a day. The well had broken out of control and for nine days its six-inch stream of oil was thrown 150 feet in the air, collecting in a lake that was one of the sights for early arrivals.

Publication of the Lucas well's performance started a hegira of oil adventurers that converged on Beaumont from every part of the United States, not to mention Canada and Mexico. The writer well remembers the impression made upon him as a youngster by the hectic rush of oil seekers in the early months of 1901. Long trains of dusty Southern Pacific coaches pulling up to the Beaumont station were crowded with excited men whose one idea was to acquire oil claims with the least possible delay. Across the dusty Main Street the curb was lined with lean framed farmers who had been trying with indifferent success to wrest a living by rice growing from the reluctant East Texas terrain. With characteristic avoidance of conversational effort they had scrawled on sheets of paper or cardboard stuck in their hatbrims descriptions of their properties such as: "80 acres, two miles southeast of Spindletop."

Toward these prospective millionaires the newcomers dashed, pressing upon them fat rolls of bills in exchange for hastily scrawled options. Checks were worthless. Nothing went but cash. Negro drivers of broken down wagons and hacks did a thriving business conveying sightseers out to the big well at five dollars a head. Along the strip of walk leading from the street to the porch of the local hotel hurriedly constructed booths enclosed the headquarters of oil companies organized with equal haste. Long queues of men stood before the post office and other lines waited in front of the one restaurant before which stood a husky guard armed with a club to prevent invasion of the premises by too eager customers. Those who could not locate a cot in the town commuted to Houston where it was possible to find a bed to sleep in and an occasional bath. Dust, heat, sweat and the feverish excitement inseparable from an oil rush—that was Beaumont in 1901. Spindletop was hidden by derricks and the prairie for miles around was dotted with drilling rigs. Most of the wildcatters never struck oil; many of the oil companies never got beyond the paper stage; for years the courts struggled to sift defective land titles. Out of it all emerged a new and important oil territory, a number of substantial producing concerns and one company destined to take its place among the great international petroleum producing, refining and marketing organizations of the world. This last is The Texas Corporation and the story of its emergence is so unusual that it deserves a separate chapter.

BOUNDLESS enthusiasm was characteristic of the men who took part in the Texas oil rush at the beginning of the century. Still it is improbable that any member of the small group who organized The Texas Fuel Company in 1902 with a capital of $50,000 dreamed that in the space of less than 30 years this little corporation would have become one of the leading factors in the international oil industry, manufacturing yearly more than 50,000,000 bbl. of crude into a great variety of finished products and distributing these through a vast transport and marketing organization extending to every part of the globe.

This is the third of a series of articles descriptive of the business structure, equipment, and operating methods of great international petroleum companies.

Texaco's Beginnings

THE men who joined the Texas oil rush were intent only on locating claims and finding oil. Beyond that their concern did not extend. Those who succeeded in getting down to the relatively shallow sands tapped at that time and in bringing oil to the surface encountered a difficulty new in their experience. They had the oil, but there was no market for it. This was a kind of oil very different from the output of the earlier Pennsylvania and California fields—a heavy base product yielding a low percentage of kerosene which was the only part having a market value. To the excited wildcatters oil was oil, but this was oil that nobody seemed to want.

Into this scene stepped a man who viewed the situation from an angle different from that of the ordinary oil seeker. That man was J. S. Cullinan, a shrewd and level-headed Pennsylvanian, one of the owners of the Petroleum Iron Works, who had gone down to Corsicana, Texas, when the first reports of oil came from that district three or four years before the breaking of the Beaumont boom. Being close at hand, Cullinan decided to step over to Beaumont to see what was doing in the new field and with an eye to picking up some orders for

The first general offices of The Texas Company, Beaumont, Texas

tanks from the producers in the Spindletop district. He found no demand for storage tanks because there was no sale for the oil that would fill them.

Instead of accepting this situation as a defeat, as the ordinary man would have done, Mr. Cullinan looked upon it as an opportunity. Wiring to some of his friends back East he raised $50,000, not for investment in doubtful claims, but to build storage tanks and to fill them with oil that could be bought at an astonishingly low price, something like three cents a barrel. Thereupon was organized on March 28, 1901, the Texas Fuel Company, authorized capital $50,000, chartered to do a general oil and pipe line business in the State of Texas. The company was an inconspicuous corporate figure even locally, but presently it underwent a slight expansion through a meeting between Mr. Cullinan and two Texans, J. S. Hogg and J. W. Swayne, who had taken an active part in the local oil development. The Hogg-Swayne syndicate held a number of claims and among its other possessions had acquired a site for a terminal at Port Arthur in southeastern Texas, including storage facilities, a partially completed pipe line and rights of way. Messrs. Hogg and Swayne were impressed by the possibilities envisioned in joining their own enterprise to that of Mr. Cullinan and his associates. After some dickering their holdings were conveyed to The Texas Fuel Company in exchange for half its stock.

The company now owned part of a pipe line system projected to extend from Beaumont to Port Arthur, about forty acres of land and a 37,500 bbl. tank at the latter point, and two storage tanks of like size about a mile and a half from Spindletop which were later known as Beaumont Station and Garrison Station. In addition it held the right of way for the remainder of the pipe line route and it took over obligations for the purchase of additonal equipment and a contract for the construction of a six-inch pipe line from Garrison Station to Port Arthur. This contract had been let to Jack Ennis, a well-remembered figure in the early development of the Gulf Coast oilfields.

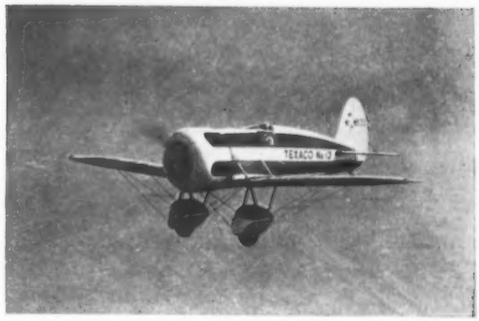
At the beginning of 1902 the production of oil in the Spindletop district was

Gusher at Spindletop, Texas Gulf coast, on the company's property, about 1901

running far ahead of available storage facilities, but the stockholders of the Texas Fuel Company went boldly forward in an effort to cope with the situation. The company purchased more land for its Garrison pumping station, authorized the erection of tankage sufficient to bring its storage facilities up to 787,500 bbls., pushed its pipe line toward completion and entered into negotiations for the erection of a loading dock on the Port Arthur Ship Canal. At the same time it established a valuable source of future profits by entering into contracts for the purchase of Spindletop crude with a number of producers. These contracts covered periods of one to three years, and in numerous instances the life of the well, at an average price of three cents a barrel. All these activities called for more capital and on March 21, 1902, an agreement was drawn for chartering The Texas Company with a capital of $3,000,000 to take over all properties and obligations of the Texas Fuel Company.

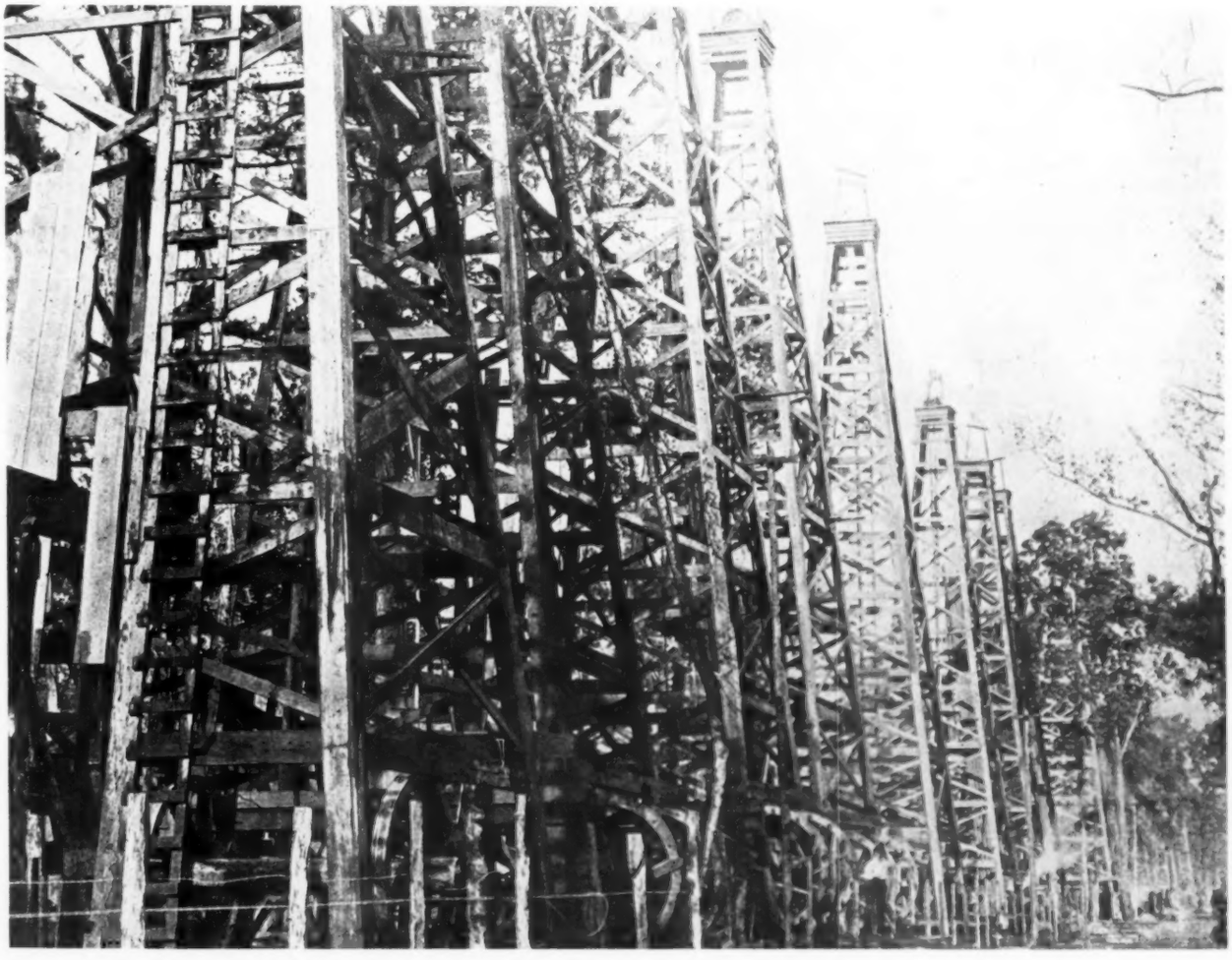
Even with this expansion it is doubtful whether the Texas Fuel Company or its successor, The Texas Company, would ever have cut a large figure in petroleum history except for the discovery of oil in the Sour Lake district. Sour Lake was an anemic health resort about 20 miles northwest of Beaumont. Its waters were reputed to be efficacious in the treatment of rheumatism and kindred ills, but the number of candidates for treatment was not large and the cure was not altogether prosperous. A large tract of Sour Lake land was owned by the Sour Lake Spring Company and an option on this land was held by an Irishman named Roche.

J. S. Cullinan had had his eye on the Sour Lake section. He believed that it would produce oil superior in quantity and quality to the output of the Spindletop district and he urged upon his associates the importance of acquiring control of as much as possible of the land. Roche wanted to be well paid for his option and the owners of the land felt that if their health resort was to be turned into an oil camp its loss of character could only be relieved by substantial financial rewards. After some stormy dickering The Texas Company undertook to drill three test wells and to pay $1,000,000 for the option if oil was brought in.



Plane used by Captain Frank M. Hawks in making many speed records

Famous "shoe-string" area north of the company's fee property, Sour Lake field, Texas



Holmes-Manley cracking units form part of the foundation of Texaco's reputation.

At that time, it is safe to say, nobody connected with The Texas Company had ever seen a million dollars or had possessed even a considerable fraction of that amount. The task of raising such a sum for an unknown Texas corporation in an unproved field might well have seemed a hopeless undertaking. Nevertheless J. S. Cullinan was determined to be in a position to control the Sour Lake production if it panned out as he anticipated. He set about his financing operations in a characteristic way.

Over at Port Arthur where the company had started to develop what was presently to become one of the great oil terminals of the world lived a man who was widely known in Texas, though not conncted with its oil industry. It is perhaps not correct to say that he lived at Port Arthur for his business headquarters were in Chicago and he had reached a state of sufficient affluence so that much of his time was spent in Wall Street and Europe and Florida. But at any rate he maintained a winter home, a sort of glorified shooting lodge, in Port Arthur and occupied it at more or less irregular intervals. His name was John W. Gates.

Gates had laid the foundation of his fortune selling barbed wire to Texas ranch owners. Texas had been good to him and he had an exceedingly warm spot in his heart for the state and its citizens. Besides, he was deeply interested in the progress of Port Arthur, which had been named for Arthur Stilwell, a somewhat spectacular figure in the railroad history of the United States. Stilwell, with money provided largely by Dutch investors, had built the Kansas City Southern Railroad, extending practically in a straight line from Kansas City to the Gulf. As a mathematical result of following the straight line principle he had selected Port Arthur as the salt water terminal for his railroad and for similar geographical reasons it had been nominated as the logical outlet for the oil to be handled by The Texas Company. Gates was interested in the railroad and in the town. The latter was strikingly devoid of revenue producing freight. Why should not Mr. Gates take an interest in a company that would bring an important volume of business to the port? This at least appears to have been the reasoning of Mr. Cullinan.

When The Texas Company's need for a million dollars arose Mr. Gates was sojourning in Florida. To Florida Mr. Cullinan, therefore, betook himself. Upon his arrival he learned that John W. with his son Charles and a friend were engaged in the, to them, new and interesting game of golf. He followed

A great petroleum refinery in Texas.

promptly to the golf links and, between strokes, explained to Mr. Gates the glowing possibilities bound up in the future of The Texas Company, provided merely that it had a million dollars which it did not then possess. While Mr. Gates was preparing for a drive from one of the tees, Mr. Cullinan expressed the modest hope that he would provide ways of getting the money.

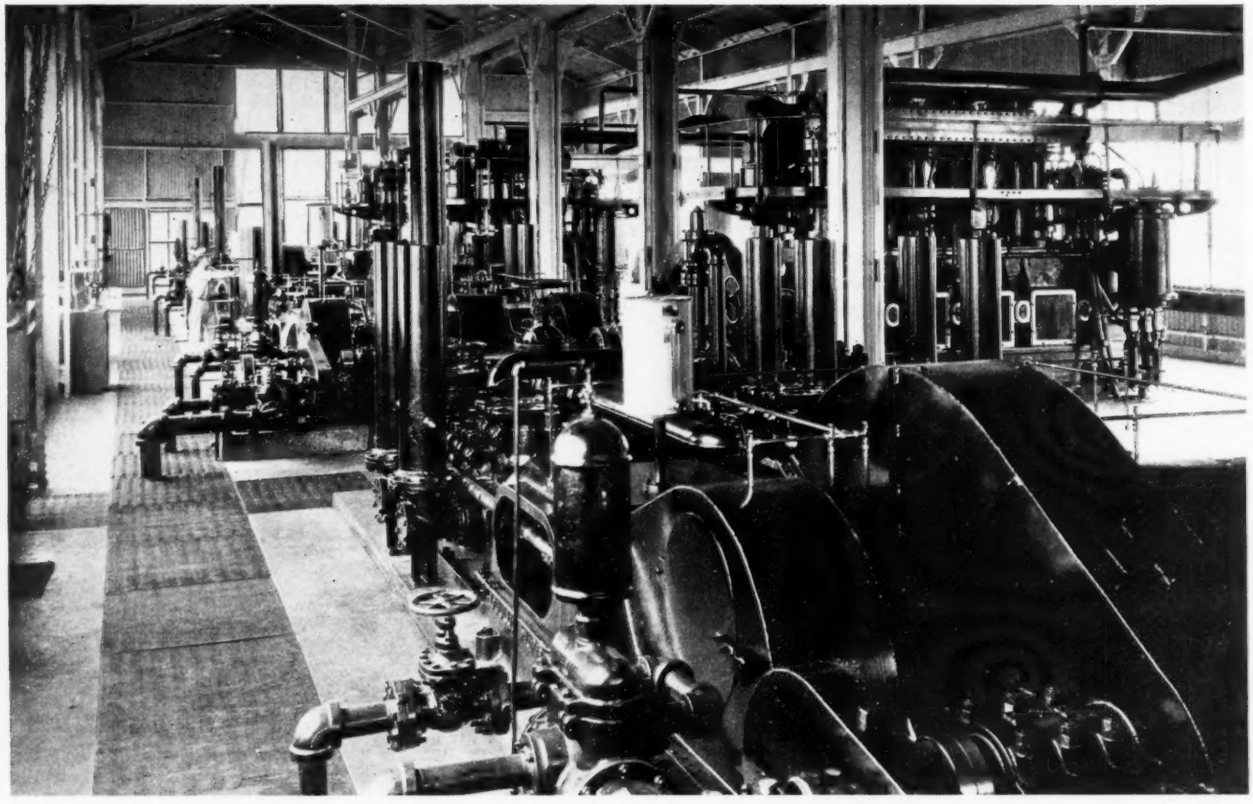
There was industrial history trembling in the balance. Mr. Gates took a lusty swing at the ball and then, looking up, said briefly, "I'll get it for you." And he did.

That little incident on the Florida golf course really marked the turning point toward future greatness on the part of The Texas Company. While Mr. Gates was engaged in assembling the million dollars needed for the fruition of The Texas Company's plans the work of drilling the test wells at Sour Lake went forward. The first well put down, near the old hotel of the erstwhile health resort, showed oil. So did the second drilling in what was later known as the Shoestring district. Meanwhile the prospectors were trying to get a reduction in the option price but, while discussion of this subject was going on, Well No. 3 broke loose as a gusher. All hope of a compromise on the price vanished, but it did not matter then for the claim was cheap at a million dollars. The problem of obtaining additional capital was simple. The organization of The Texas Company was confirmed by a state charter issued April 7, 1902. Of the $3,000,000 capital $1,650,000 was then issued. Within a year the remaining $1,350,000 had been taken and the company boasted 119 stockholders, a group that at the present time has grown to a number over 75,000 no one of whom controls more than three percent of the company's stock. From its very beginning The Texas Company has strikingly maintained its character as a great, independent corporation free from group control or entangling alliances.

The first president of the company was J. S. Cullinan, who had been the animating spirit in its formation and in setting it on the way to future greatness and financial success. Other officers were Arnold Schlaet, first vice president; Rod Oliver, second vice president; Fred W. Freeman, secretary; A. C. Miglietta, assistant secretary; E. J. Marshall, treasurer; T. J. Donoghue, assistant treasurer. The original directors were L. H. Lapham, New York; Arnold Schlaet, New York; John W. Gates, Chicago; J. C. Hutchins, Chicago; J. S. Cullinan, Corsicana, Texas; Rod Oliver, Dallas; R. E. Brooks, W. T. Campbell and E. J.

On the Pacific coast the company has a refinery,—Los Angeles plant of The Texas Company (Cal.)

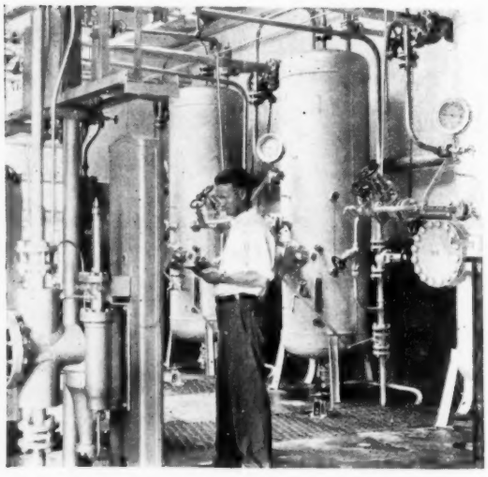
Port Arthur plant of The Texas Corporation



Typical Diesel pumping station of The Texas Pipe Line Company showing geared pumps

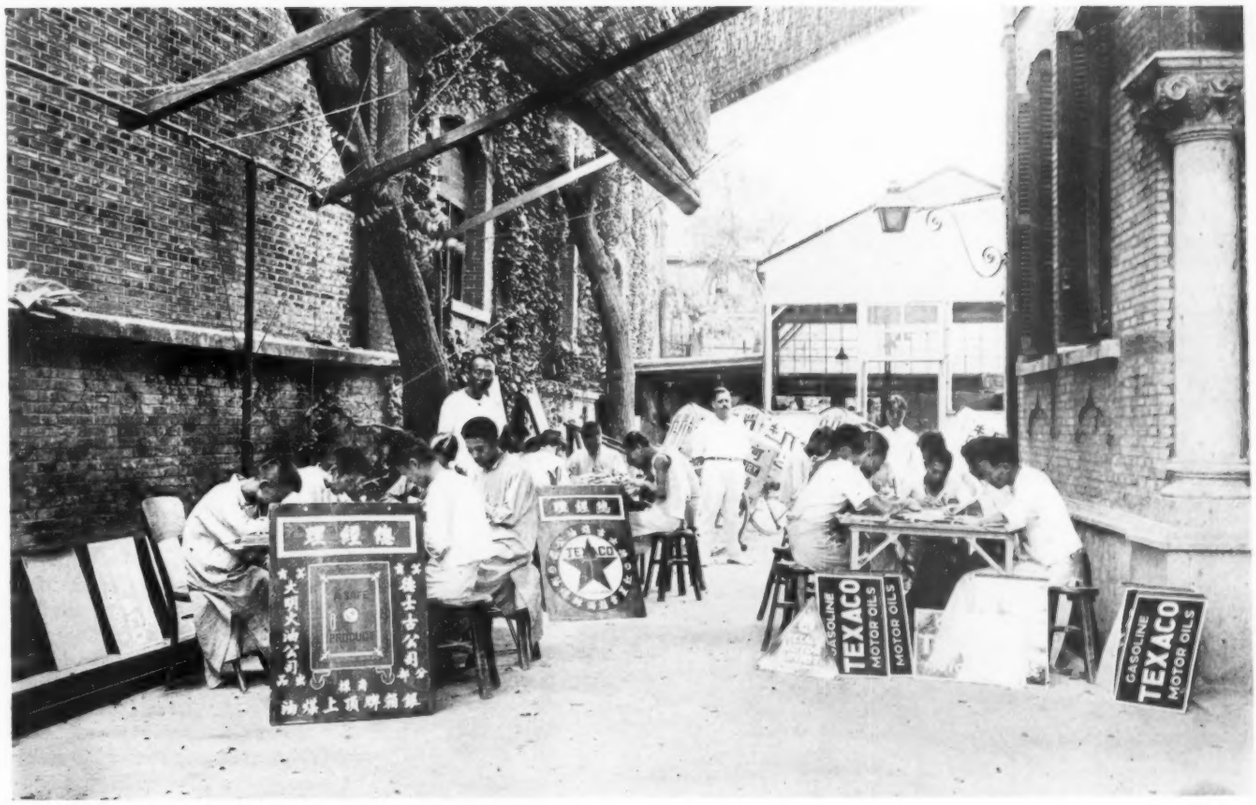
Marshall, Beaumont, Texas. Others identified with the early progress of the company were James L. Autry, Amos L. Beaty, C. P. Dodge, R. C. Holmes, L. R. Holmes, B. E. Hull, Robert A. John, E. C. Lufkin, F. T. Manley, Ira McFarland, M Moran, T. Rieber, W. B. Sharp, W. A, Thompson, Jr., and C. E. Woodbridge. Of these Mr. Holmes is now the president of the company while Mr. Donoghue and Mr. Rieber are vice presidents. Mr. Woodbridge is treasurer and Mr. McFarland is comptroller. Many others connected with The Texas Company in its early days are still associated with it in important capacities. There has been a continuity of management and of principles in the history of the company that is more frequently found among European than American corporations.

Refinery control house in a Texaco plant



A number of the men who have been connected with the company as directors and stockholders became interested in it through the efforts of John W. Gates in raising the million dollars that he promised Mr. Cullinan during their interview on the Florida golf links. How much of a task Mr. Gates found this to be he apparently never related, but it is known that some of the men who were invited to take shares in the company declined the offer to their subsequent regret. A business man who was an assistant to a prominent New York capitalist when The Texas Company was being organized related to the writer that his employer received a note from one of his friends urging him to purchase a block of Texas Company shares. Being somewhat doubtful as to the prospects of the company he called up H. H. Rogers at 26 Broadway and asked his advice. Mr. Rogers' opinion was emphatic and vigorously expressed. He held that The Texas Company did not then amount to anything in the oil business and never would. That even the mighty are liable to error is shown by the fact that since its organization The Texas Company never has missed a dividend. From 1902 to 1930 the company paid to stockholders over $275,000,000 in cash dividends and over $38,000,000 in stock dividends. Since its initial offering its financing has been done mainly by offerings of subscription rights to stockholders.

With the advent of the Sour Lake district as a producing territory, in addition to its contracts with wells in the Spindletop section, The Texas Company was well supplied with crude. Its urgent need was facilities for moving the oil to a seaboard shipping point, treating it and finding purchasers for the marketable product. At the meeting of directors following the first annual meeting of the company on November 22, 1902, appropriations were made for the construction of additional storage, for the purchase of a bulk oil barge and for the start of a refinery at Port Arthur. At that time very little demand for gasoline existed. Kerosene was the one important product and the yield of kerosene



Manufacturing Texaco signs in the Orient where the company's trade mark is a familiar sight to consumers of petroleum products

from Texas crude was so low that the oil was not sought by refiners. The opinion prevailed that the only new use for which the output of the Texas wells could be employed to advantage was as fuel and in a state so largely agricultural as Texas there was little field for the use of oil fuel. It is noteworthy that the first market developed by The Texas Company was among the sugar houses of the neighboring state of Louisiana. Coal was relatively expensive in Louisiana and plantation owners who required a lot of power to operate their sugar factories were glad to get the cheap, efficient and convenient fuel that had become available so close at hand. Sugar making in Louisiana was a seasonal occupation, however, and all the oil the sugar mills could consume was only a tithe of the quantity that Texas had to offer. It was necessary to look further afield to find customers.

When The Texas Company was organized it was arranged that Mr. Cullinan was to direct its field activities while Arnold Schlaet of New York, who became first vice president, was to look after the marketing of the company's output. The one concern equipped for refining and handling oil on a large scale was located at 26 Broadway and it is said that Mr. Schlaet first offered his wares at the headquarters of Standard Oil. He received a polite hearing, but no orders. It was told later that the subject was discussed at length around the table in that historic building where almost everything pertaining to the petroleum industry passed in review at one time or another. According to this story the preponderant opinion among those who then directed the destinies of the Standard organization was that it would be better to let the infant Texas industry languish on its own shores rather than to encourage the building up of a business that might become a formidable competitor.

In another quarter Mr. Schlaet met with better success for he was able to close a contract with the British Petroleum Company for the sale of 1,000,000 bbls. a year over a period of three years at a price which brought his company $3,000,000. That was an important contract and it held a special significance in that it marked the first step of The Texas Company in international trade, a branch of its business which was to expand until it encircled the globe.

Before The Texas Company was a year old it had outgrown its first quarters in the little frame and sheet iron building on Main Street, Beaumont, and moved to new offices in the old "Temperance Building." An important factor in the affairs of the company, and one that con-

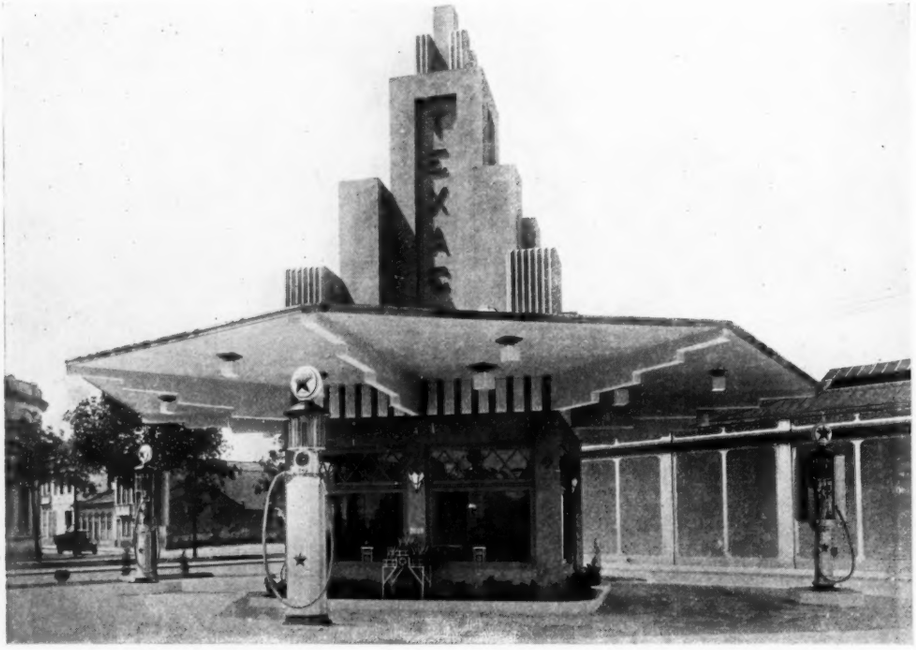
Winter in the Moffat field of Colorado

tributed much to the comfort and enjoyment of its official staff in the days when living conditions in Beaumont were far from luxurious, was the Texas Club. It occupied a comfortable frame house on Calder Avenue which served as living quarters for the officers of the company and as a meeting place for many oil men in Beaumont. Its hospitable board was a daily forum for the discussion of everything that concerned the oil business in general and the progress and prospects of the Texas oil industry in particular.

Progress in the Early Days

THE first important move toward expansion taken by the Texas Fuel Company, even before its transformation into The Texas Company, was in the direction of acquiring a pipe line system and a tidewater terminal, as already related. The second, taken very promptly after the change of name was adopted, was the erection of a refinery. In 1902 two asphalt stills were completed and late in 1904 four 1,000 bbl. stills were put into operation on the site which the company had acquired. The output of the plant was about 1,000 bbl. daily and it was connected by a pipe line to a loading wharf located on deep water some three miles distant. This was the nucleus of the present great Port Arthur refining plant of The Texas Company, which covers nearly 5,000 acres and has a crude oil charging capacity of 60,000 bbls. daily.

The first refinery manager of The Texas Company was a young man named R. C. Holmes, who had come down to Texas from Olean, New York. The oil world was to hear much more of Mr. Holmes in following years, not only as a refining expert, but as a great leader and corporation executive. Even at that time he had acquired a reputation in the specialized field of refining and had developed a number of original ideas which he proceeded to embody in the company's plant. We shall come back to that part of the story a little further on.



Attractive service stations of modern design aid Texaco's marketing in Rio de Janeiro

With a refinery and a shipping station it was essential to provide the company with a marine department. In the beginning this consisted of a single barge 130 ft. long with a crew of two besides a man on shore to help handle loading and discharging operations. Later on the company became the owner of a general utility boat rejoicing in the name of The Texas Girl. This was a combination business and pleasure craft, the vehicle of occasional picnic excursions and it is still in service, the veteran of a fleet of 152 marine units.

In 1905 a new producing field was developed at Humble and The Texas Company promptly extended a pipe line to tap it. In the following year work was begun on the line that was to become the main artery of the company's pipe line system, an eight-inch link extending from Tulsa, Oklahoma to Port Arthur, a distance of 600 miles. A jointly owned line has since been carried northeast to the company's refinery at Lockport, Illinois. Extension of its lines to Oklahoma was made necessary to supply the constantly growing demands of the company's refineries. The original plant at Port Arthur was steadily enlarged in capacity and in 1906 the Port Neches refinery was acquired. Meanwhile an active marketing organization was rapidly extending the territory in which Texaco products were sold. The first big export sale made by The Texas Company was a cargo shipment of kerosene and solar oil to England and the export field has been assiduously cultivated by the company from the beginning. The first foreign terminal was established at Antwerp in 1905 and in the years immediately following sales offices were opened in many of the principal European and South American countries. Operations were thence extended to other parts of the world. Today Texas Company products are distributed by a group of subsidiaries covering each of the five great continents and the islands of the far seas.

In the domestic field progress has been equally well maintained. In the first two years of the company's operation only fuel oils were sold. The first barge shipment from the Port Arthur terminal was made October 1, 1902 and was destined for the sugar growers of Louisiana. The Amesville, Louisiana, terminal was the first to be added to Port Arthur. It was established in 1902 with the primary object of distributing fuel oil to sugar plantations along the Mississippi. In 1904 asphalt was added to the company's products as were lubricating oils, gasoline, kerosene, and various distillates. Gasoline sales, which were about 20,000 bbl. in 1906 had increased to 7,000,000 bbl. in 1920 and to over 30,000,000 bbl. in 1929.

In 1905 the company built its first bulk distributing stations at Eagle Pass, Laredo and San Antonio, Texas, for the handling of kerosene, naptha, gasoline, lubricating oils, and greases. With the great increase in the use of automobiles which began about that time the extension of these stations to other states went forward rapidly. The Delaware River terminal at Marcus Hook, Pennsylvania, received its first cargo of fuel oil in 1906.

In the same year the terminals at Baltimore, Philadephia and Providence, Rhode Island, were completed. From 1907 to 1909 terminals were erected at Mobile, Alabama, Bayonne, New Jersey and Portland, Maine, giving the company distribution facilities along the entire Gulf and Atlantic Seaboards. Additional refineries were located at Dallas, Texas, Tulsa, Oklahoma and Lockport, Illinois. With the steady growth of the company's business distributing and marketing facilities were extended until distribution now covers every state in the Union.

In the early days horse drawn tank wagons were used in the cities for distribution of gasoline and kerosene to retail distributors and farm wagons loaded with 30 to 36 ten-gallon cans of kerosene were sent to outlying districts to supply the country store trade. The use of motor tank trucks was begun about 1911 and they gradually replaced the earlier horse drawn equipment.

For domestic distribution the company has developed a large tank car fleet. Its beginning dates back to 1902 when four tank cars were purchased. The following year three more were added. Today the distribution of Texaco products requires the use of 7,600 cars, enough to form a solid train more than 50 miles in length.

By 1910, though it had been in business less than ten years, The Texas Company had definitely emerged from its earlier position as a local organization and was operating on a national and international scale. Its crude production had reached 7,192,552 bbl.; it had built 1,276 miles of trunk, branch and gathering pipe lines in Texas, Oklahoma and Louisiana; it was operating refineries at Port Arthur, Port Neches, and Dallas, Texas and Tulsa, Okla.; its products were distributed through 231 bulk stations in 21 states and through branches in 11 foreign countries. The modest company organized to handle the unmarketable overflow of the Spindletop wells was in the way of becoming an industrial giant.

An Efficient Refiner

WHILE The Texas Company from the beginning of its ambitious career has developed as a fully integrated organization, producing, refining, transporting and selling crude oil and its products, its conspicuous successes have been won in the two fields of refining and marketing. As a refiner the company early reached a position of leadership which ever since has been maintained. The record of its refining growth is shown by figures, representing crudes run at successive periods in its history.

Runs to Stills

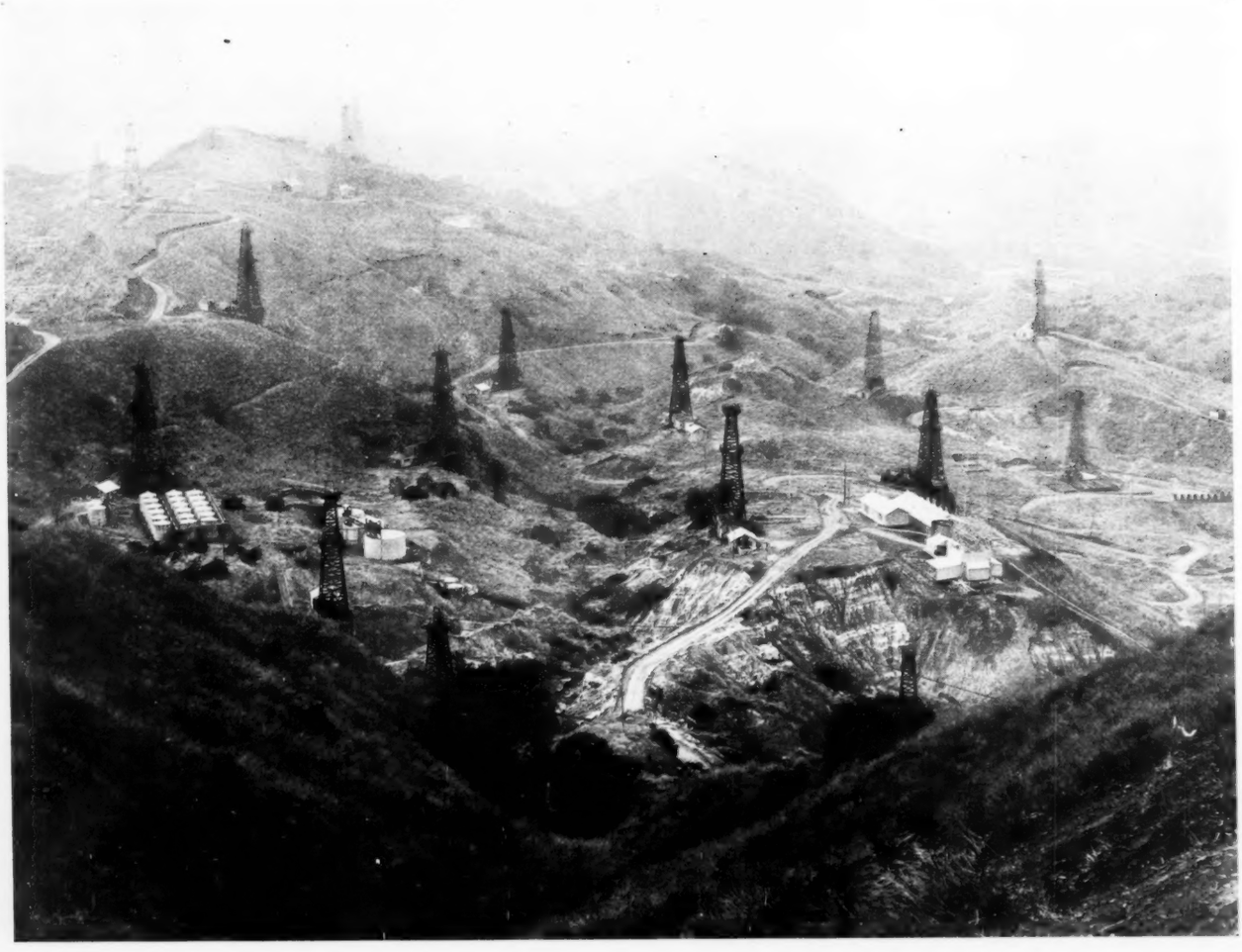
Year	Crudes run bbl.
1905	548,136
1910	8,564,644
1915	17,874,880
1920	31,418,286
1925	34,414,290
1930	57,434,845

In the earlier years of The Texas Company kerosene was the principal refinery product with gasoline holding a minor place but these positions were soon reversed by the rapid spread of motor cars, particularly in the United States. Even in these early days the Port Arthur refinery established a high reputation for efficiency, partly by reason of its excellent equipment but largely because it was manned by an exceedingly able and well-trained staff under the direction of R. C. Holmes who was manager of the refining department from the beginning of The Texas Company until 1923. As the demand for gasoline increased and the elemental method of simple distillation gave place to improved methods of recovery the position of leadership enjoyed by The Texas Company's refineries was increased by the development and the adoption of the Holmes-Manley cracking process.

This process was developed commercially by R. C. Holmes and F. T. Manley. The latter was for many years assistant manager and later manager of the refining department and is now vice president in charge of all refining operations.

In the operation of the Holmes-Manley process, a gas oil is preferably used as charge stock for the apparatus, although other heavy fractions of crude oil can be used satisfactorily. This gas oil charge stock first passes through heat exchangers in which it serves to help cool the products made in the process and in addition takes up heat which otherwise would be wasted. It is then pumped, together with recycled oils, whose origin is traced, through the tubes of a DeFlorez Upshot Heater, which is a cylindrical vertical furnace fired with gas burners at the bottom. Around the inside circumference of the cylinder vertical tubes are arranged for the passage of the oil. Heated to 900 deg. to 925 deg. F., and at a pressure of 400 lbs., the oil, which probably is really a very dense vapor, passes to well insulated vertical reaction chambers. There are two, some times more, of these vessels suitably interconnected. These vessels are made by a special process of electrically welding plates of boiler steel 3 inches or more in thickness. A single

Bulk distributing station in Hong Kong, one of the outposts of Texaco's world wide activities



Striking view of the Harvey lease, South Mountain field

vessel may be 5 to 7 feet in diameter and over 40 feet long. These reaction chambers provide a space where the hot vapor can soak in its own heat and where, as the name implies, the reactions which occur at this temperature and pressure have time to take place. In these chambers, the material undergoing reaction separates into two parts. What may be called the first part is the vapor which leaves the top of the last recation chamber and is conducted to the bottom of the bubble tower. This tower is as strongly constructed as the stills, which it closely resembles, because the pressure in the Holmes-Manley cracking process is the same throughout the reacting and condensing system. The bubble tower is fitted with plates and in accord with the principles of fractionation serves to separate from the incoming vapor the partially converted charge stock which is returned to the heater as recycle. The tower allows the fractionated gasoline vapor to pass through it to the condensers.

From the condensers the liquid gasoline flows through the control room, where the pressure is released, and out to storage.

The second part of the separation in the reaction chambers is the liquid which is drawn from the bottom of these chambers as rapidly as formed. This liquid consists of a mixture of gasoline, partially converted charge stock and fuel oil. an interconnected expansion chamber and bubble tower. It is released into the expansion part of the vessel at a reduced pressure somewhat above atmospheric. The fuel oil is dropped out, cooled and pumped to storage. The vapor containing the partially converted charge stock and the gasoline goes into the bubble tower where the partially converted charge stock is separated and returned to the heater as recycle. The gasoline vapor passes to the condenser and through the control room to storage. It is similar to the gasoline from the first bubble tower separation and is combined with it.

One unit of this process will charge 2,000 bbl. of virgin gas oil charging stock in a 24 hour day, and will produce 1,400 bbl. of unfinished gasoline, a conversion of 70 percent. The unit remains in operation for long periods of time before the accumulation of coke in certain parts of the equipment makes cleaning necessary. The unfinished gasoline produced requires various additional treatments dependent upon the scource of the charge stock.

The Texas Company operates 79 Holmes-Manley units. Others operate under license 48 units, a total of 127 units. The M. W. Kellogg Company, New York, arranges for licenses to prospective users.

The Texas Company appreciated at an early date the future importance of the cracking art. It was consequently enabled to obtain a strong patent position through well directed research work and

through purchase. Not only is it the originator of the Holmes-Manley cracking process, but it is also privileged to use the Cross process, another outstanding cracking process, which differs from the Holmes-Manley in that the vapor is not separated in the reaction chamber but the entire charge is expanded together after the reaction is complete.

Among the newer processes The Texas Company has the privilege of using the DeFlorez Vapor Phase process. This process is peculiarly adapted to the production of exceptionally high anti-knock gasoline. It operates upon the clean circulation principle, which means that only clean distilled oil is circulated through the heater, acting as a heat carrier to other stocks to be cracked. In this way, practically any class of stock can be heated to the necessary temperature for the production of high anti-knock gasoline without undue expense for repairs.

The commercial value of the Holmes-Manley cracking process is best indicated by the fact that it enabled The Texas Company in 1930 to obtain an average of 20½ gallons of gasoline from every 42 gallon bbl. of crude run. This recovery of 49 percent compares with 25 percent before the introduction of cracking and with an average of 42 percent for the whole refining industry. While controlled by The Texas Company the process has been leased to many other refiners on a royalty basis.

As The Texas Company extended its operations to producing fields outside the South Texas territory and as the scope of its marketing activities broadened, the company established refineries at strategic points. The list of its present refining plants is as follows:

The Texas Company's Refineries

Refinery	Date of Establishment or Acquisition	Daily Crude Capacity (bbl.)
Port Arthur, Texas	Nov. 3, 1903	60,000
Port Neches, Texas	Sept. 1, 1906	20,000
Houston, Texas	Nov. 28, 1928	20,000
West Dallas, Texas	Jan. 1, 1908	16,000
San Antonio, Texas	July 27, 1929	3,000
El Paso, Texas	July 30, 1929	1,500
Amarillo, Texas	Nov. 1, 1928	3,000
West Tulsa, Okla.	Sept. 1, 1910	14,000
Lockport, Illinois	Dec. 31, 1911	20,000
Pryse, Kentucky	Sept. 1, 1926	2,000
Craig, Colorado	Oct. 13, 1926	1,000
Casper, Wyoming	Feb. 6, 1923	7,000
Cody, Wyoming	May 22, 1929	3,000
Sunburst, Mont.	Mar. 2, 1928	4,500
Los Angeles, Calif.	Mar. 2, 1928	30,000
Filmore, California	Mar. 2, 1928	4,000
Total		209,000
Topping Plants		
Shreveport, La.	Nov. 8, 1920	6,500
LaBarge, Wyoming	Mar. 2, 1928	300
Coalinga, Calif.	Mar. 2, 1928	500
Total		7,300
Asphalt Plants		
Norfolk, Virginia	May 7, 1916	1,500
Marcus Hook, Pa.	July 13, 1916	1,500
Providence, R. I.	Apr. 18, 1917	1,500
Total		4,500
Total daily capacity		220,800

Texaco stations serve 48 states of the Union.

While gasoline may be termed the major product of manufacture The Texas Company produces altogether no less than 400 separate products including illumi-

nating, and burning oils, motor oils, lubricating oils of many varieties and viscosities, greases, waxes, gas and fuel oils, asphalts, roofing and petroleum coke.

One of the specialized activities to which The Texas Company has given much attention is the production of asphalts to which the Port Neches plant, located on the Neches River, about eight miles north of Port Arthur, is primarily devoted. This refinery was erected in 1902 by the Central Asphalt and Refining Company and was acquired by The Texas Company in 1906. It is the largest plant of its kind in the world, manufacturing asphalt for road surfacing, roofing, insulation, waterproofing materials and various grades of road oils. From 300 to 400 men are employed in the plant which consumes, besides oil, more than 75 tons of paper felt, 100 tons of talc and 300 tons of slate each month. A barrel factory which forms part of the Port Neches plant turns out 1,000 barrels daily for the shipment of soft asphalt while a drum factory produces 1,500 iron drums per day as containers for hard asphalt.

Auxiliary to refinery operations is the manufacture of containers for the shipment of the company's products. Two case and package plants are maintained, one at Port Arthur and the other at Wilmington, California. At Port Arthur this branch of The Texas Company's activities constitutes an important business in itself. It includes a shook mill, box factory, two can factories, a casing plant and warehouses. Its daily consumption of materials includes over 50 tons of tin plate and 115,000 feet of lumber.

From the beginning of its marketing activities The Texas Company has devoted special attention to the provision of attractive and durable containers for its case goods and the kerosene cans marked with the red star are highly esteemed in China and other remote countries for their utilitarian value as well as for their contents. Something over 15,000,000 tin cans are turned out at the Port Arthur plant in the course of a year by automatic machines into which sheets of tin are fed at one end while complete cans emerge at the other. Boxes automatically cut and nailed are manufactured at the rate of 2,000 per hour. A filling and capping machine can handle 2,000 five-gallon cans hourly while another machine places two five-gallon cans in a case which is delivered to a conveyor that passes it under an automatic cover-nailing machine and then sends it along to the warehouse or to waiting ships. At the ship's side the cases are delivered to a spiral conveyor which carries them into the hold. A continuous system of these automatic conveyors keeps the line of cases steadily moving from the filling machines to the steamers moored alongside the loading dock while a counting device checks the number of cases loaded. Forty thousand cases a day can be handled at the Port Arthur docks.

Production

ALTHOUGH The Texas Company regularly refines somewhat more than the output of its own wells, purchasing from outside interests about 40 percent of its crude supplies, the company ranks fifth among the producing companies of the United States. It holds in fee or under lease more than 6,500,000 acres of land and operates over 6,800 wells. Its peak production of 50,675,363 bbl. was attained in 1929. In 1930 its output was cut down to 42,287,291 bbl. in furtherance of the conservation program of which the company has been an active and consistent supporter.

Texas is still the company's chief source of crude, contributing nearly 40 percent of the total supply. Beginning as we have seen, with the Spindletop, Sour Lake and Humble fields The Texas Company has extended its operations to other parts of the state as successive producing territories have been opened in Central Texas, West Texas and the Panhandle district and more recently in East Texas.. Its first excursion beyond the Texas border was its entry into Oklahoma which ranks third among the states as a source of its crude supply. It has participated also in the development of the Louisiana, Kansas and Arkansas fields. Further away from the scene of its first activities the company operates wells in Kentucky, New Mexico, Colorado, Wyoming and Montana. By its acquisition of the California Petroleum Corporation in 1928 it became an important factor in Pacific Coast production with substantial holdings in the Santa Fe Springs, Signal Hill, Midway Sunset, and South Mountain fields.

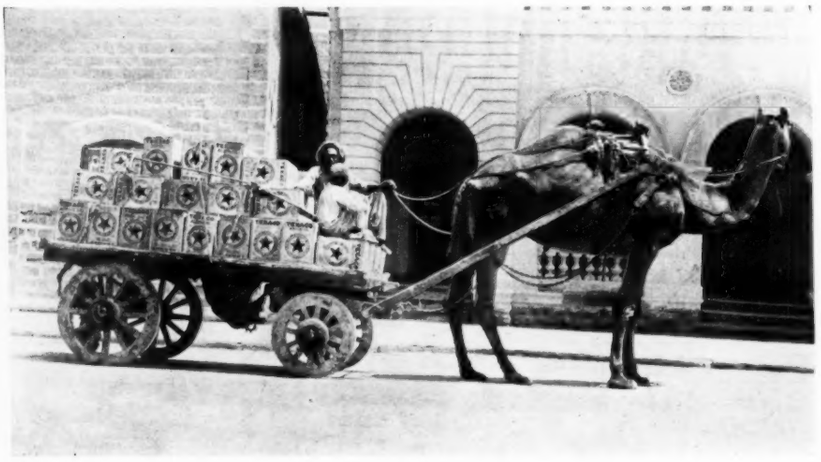
Outside the United States the only territory in which The Texas Company has developed production is in Mexico where its crude output in 1930 was 253,414 bbl. Through subsidiaries it controls by ownership, lease or purchase options on 1,000,000 acres in foreign countries mainly in Colombia and Venezuela. In addition California Petroleum Corporation of Venezuela, in which Texas owns a half interest, holds 679,568 acres in Venezuela in concessions for exploration and development.

The accompanying table shows the distribution of the company's wells and the volume of its crude production from each of its various territories in 1930.

The Texas Company's Production

Territory	No. of Active Wells	Production (bbl.)
Texas	2154	16,871,096
Louisiana	375	2,715,172
Arkansas	216	1,246,499
Oklahoma	1801	5,301,041
Kansas	998	1,278,982
Kentucky	551	237,075
New Mexico	20	1,336,137
Colorado	34	659,971
Wyoming	95	773,093
Montana	48	177,641
California	501	11,437,170
Total U. S.	6793	42,033,877
Mexico	24	253,414
Total	6817	42,287,291

Camel delivery in India. A study in power contrast



Transportation

FOR the movement of 40,000,000 to 50,000,000 bbl. of crude from points of production to refineries and the distribution of other millions of barrels and cases of refinery products to their ultimate markets a tremendous transportation system is required. In the first part of this movement pipe lines play a leading part and The Texas Company's system comprises more than 6,500 miles of line. The main stem of this system is the

trunk line extending from Tulsa on the north Port Arthur and Houston on the south with branches from Tulsa to the neighboring fields and from Port Arthur to Shreveport, Louisiana and southern Arkansas. In 1928 the North and North Central Texas line was extended to Gray County, Texas, a distance of 440 miles, providing an outlet for 15,000 bbl. daily from the Panhandle district and bringing 10,000 bbl. daily additional supply to the Port Arthur refinery. In 1929 a line was pushed westward from Houston to the West Texas field with an extension into New Mexico. This line added 600 miles to the company's pipe transportation facilities and has a daily capacity of 60,000 bbl. In 1929 also the Texas-Empire System of 12 inch line was run from Lima, Oklahoma, to Lockport, Illinois and to East Chicago, Indiana, a distance of 733 miles. This line is owned and operated by The Texas-Empire Pipe Line Company the shares of which are held in equal parts by The Texas Corporation and the Empire Gas and Fuel Company, a subsidiary of Cities Service Company. This line has a daily capacity of 70,000 bbl. More recently the Company's system has entered the East Texas field. By these operations, which represented a greater expansion than ever before had taken place in the company's land transportation facilities, its wells and refineries in the great Mid-continent field were linked together by a network of pipe lines and an increased outlet was afforded to the tremendous market of which Chicago and its environs form the hub. In California the company owns lines connecting its producing territories with its refineries and shipping terminals. The total run of the company's pipe lines in 1930 was 51,322,045 bbl.

In the distribution of products from its refineries The Texas Company employs water transportation so far as possible. In conformity with this plan it has established a series of 17 tidewater terminals that dot the coast of the United States at convenient intervals from Portland, Maine, to Seattle, Washington. To serve these terminals, as well as its many foreign stations, the company maintains a fleet of 24 steamships and six motorships with a gross tonnage of 167,950 tons. The full marine equipment of the company, including tugs, lighters and barges numbers 152 units. In 1930 its fleet covered runs of 1,577,313 nautical miles and conveyed cargo totaling 4,501,906 long tons.

For distribution inland from its terminals and refineries the company operates 7,600 tank cars, owned and leased. The distance covered by the company's cars in 1930 was 93,595,263 miles.

Marketing

THE primary purpose of the vast capital investment and the tremendous expenditure of money and effort in wresting oil from the depths of the earth, conveying it hundreds of miles in pipe lines, transforming it into commercially useful products and distributing these to all quarters of the globe is, of course, to sell to consumers at a profit. The marketing system of an international petroleum company is the blood stream that keeps the whole organization alive. The success of any business that is not an outright monopoly is measured to a large extent by the efficiency of its marketing end.

In its contact with consumers The Texas Company has been highly successful in that it has enjoyed both the patronage and the good will of the public throughout its sales territories. It is the only oil company that has complete distribution in every one of the 48 states of the American union and its export department operates in 51 countries. Its methods of distribution and sale present certain distinctive features that undoubtedly have contributed to its present position as a marketer.

The Texas Company—The Corporation

IN carrying along this account of The Texas Company we have referred to it as though it had maintained an unchanged corporate status from the time when it emerged as a transformation of the Texas Fuel Company. As a matter of fact the policy and business development of the company has continued without a break from the date of its organization. From time to time however, changes have been made in the charter rights and corporate structure of the company in order to enable it to deal more effectively with expanding trade requirements and responsibilities.

In its inception the company was organized under a Texas statute which authorized the creation of corporations for storing, transporting, buying and selling oil and gas in that state. It was at least questionable whether or not the wording of this statute did not limit the operations of companies chartered under it to the State of Texas. Only a forced construction permitted a corporation formed under its authority to produce oil and it was completely silent on the subject of refining. In order to clear up doubt on this point by enabling the company to engage in refining and to operate outside the state, the Texas Legislature in 1914 passed a special measure known as The Texas Company act. In addition to the powers previously conferred, it authorized the company to "own and operate refineries, casing and treating plants, sales offices, warehouses, docks, ships, tank cars and vehicles necessary in the conduct of its business; and to cause the formation of corporations outside this state, not exceeding one in any state, territory or foreign country, whose purposes and powers exercised shall be only those conferred by law upon the forming or holding company as incorporated under Texas laws."

In 1917 a further act to facilitate the operations of The Texas Company was enacted by the legislature. It provided that "in lieu of engaging directly in the oil and gas producing business in any state or country, this company may own stock of other corporations engaged in said business, but it shall not own the stock of more than one such corporation organized under the laws of this state or any other single state."

In view of the well known and oft displayed antipathy of Texas legislators to corporate combinations or inter-com-

Tank-truck and trailer which represents one of the latest developments in trucking

Automatic filler handling five-gallon cans

pany control it is evident that The Texas Company was considered to have led an exemplary corporate life during the 15 years of its existence. Otherwise it would not have received the compliment of a special legislative act enlarging its powers. As a matter of fact the relations between the company and the Texas authorities always have been most cordial and friendly and the people of the state have not concealed their pride in the remarkable growth and prosperity of the corporation named for the state and personifying, as they felt, its spirit and enterprise.

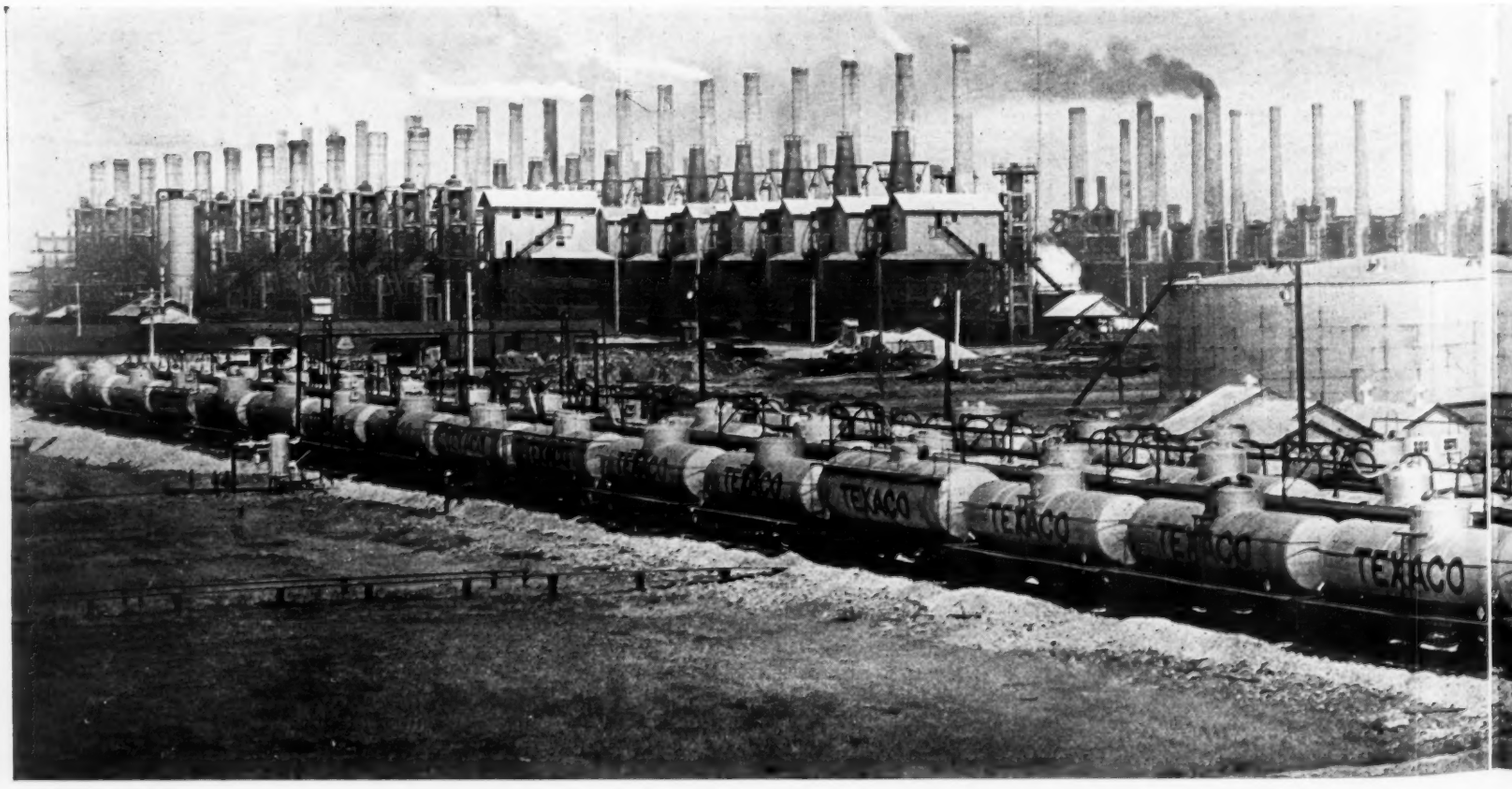
Prior to the legislation of 1917 the producing activities of The Texas Company interests had been carried on by an affiliated corporation — the Producers Oil Company. This company was now dissolved and its assets and organization were taken over by The Texas Company. In the same year The Texas Company organized The Texas Pipe Line Company with a capital of $14.000,000, now increased to $50,000,000, and The Texas Pipe Line Company of Oklahoma capitalized at $6,000,000. To these two companies it conveyed its pipe lines, pump stations, tanks and certain other physical properties, including over 1,250 miles of trunk pipe lines and 2,000 miles of appendant telephone and telegraph lines. The pipe line system to the end of 1930 had grown to 6,546 miles and the company's telephone and telegraph system comprised 1,418 miles of wire.

For nearly a quarter century from the time when its business career began The Texas Company continued its legal entity as a Texas corporation. In those years it had grown from a local concern devoted entirely to intrastate business to an international organization with ramifications extending to many lands. Its progress was hampered by the limitations of Texas law in regard to holdings in other corporations. In 1926, therefore, there was incorporated under the laws of Delaware, The Texas Corporation, a holding company with an authorized capitalization of $250,000,000 —since increased to $350,000,000—in shares of $25 each.

Following the organization of The Texas Corporation that company acquired all the property and assets of The Texas Company of Texas which were in turn conveyed to a new The Texas Company, incorporated in Delaware in 1927, which is now the active operating company except on the Pacific Coast where the business is carried on by The Texas Company (California) which is the principal subsidiary of the California Petroleum Corporation (Virginia) which in turn is over 99 percent owned by The Texas Corporation. The California Petroleum Corporation was acquired by The Texas Corporation in 1928 through the exchange of shares on the basis of one share of Texas stock for two shares of the California company. This purchase strengthened The Texas Corporation by giving it large supplies of crude oil, refineries and distribution facilities on the Pacific Coast and a convenient base of operations for its Pacific and Far Eastern trade.

The Texas charter of the original The Texas Company was surrendered on April 20, 1927 and the change of legal habitat was thereby completed. The New York offices of the corporation are now located in the lofty Chrysler building in New York City but the company is still identified in the minds of the oil fraternity with the development of Gulf Coast production from which it sprang. Probably it always will remain so associated.

Transportation of Texaco petroleum products



The companies owned by The Texas Corporation and through which its multifarious activities are carried on are incorporated in 10 states and 16 foreign countries or dependencies. The list is shown in the accompanying tabulation.

The Texas Corporation's Subsidiaries

Name	Where Incorporated
The Texas Company	Delaware
California Petroleum Corporation	Utah
Ventura-Colorado Oil Company	Maine
Texas Production Company	Colorado
The Texas Company of Mexico, S. A.	Mexico
Texaco Sociedad Anonima	Mexico
Texas Petroleum Company	New Jersey
The Texas Company of Canada, Ltd.	Canada
The Texas Oil Company, Limited	England
The Texas Co. (of Ireland) Ltd.,	Ir. Free State
The Texas Company, S. A. F.	France
Societe Anonyme des Huiles Galena	France
The Texas Company, S. A. B.	Belgium
N. V. The Texas Company	Holland
The Texas Company, A. B.	Sweden
The Texas Co. (Overseas) Ltd.	Delaware
The Texas Company, A. S.	Denmark
The Texas Company, S. A. I.	Italy
The Texas Co. (S. Afr.) Ltd.,	Union of S. Afr.
The Texas Company (India) Ltd.	Delaware
The Texas Co. (Australasia) Ltd.,	New S. Wales
The Texas Company (China) Ltd.	Delaware
The Texas Co. (Philippine Is.) Inc.,	Phil. Is.
Galena-Signal Oil Co., Soc. Ano.,	Argentina
Soc. Ano. de Oleo Galena-Signal	Brazil
The Texas Co. (S. America) Ltd.,	West Va.
The Texas Co. (West Indies) Ltd.	Cuba
The Texas Co. (Caribbean) Ltd.	Delaware
The Texas Co. (Porto Rico) Inc.	Porto Rico
The Texas Pipe Line Company	Texas
The Texas Pipe Line Co. of Okla.	Oklahoma
*International Refining Company	Montana
Mineral Investing Corporation	Delaware
California Petroleum Corporation	Virginia
The Texas Company	California

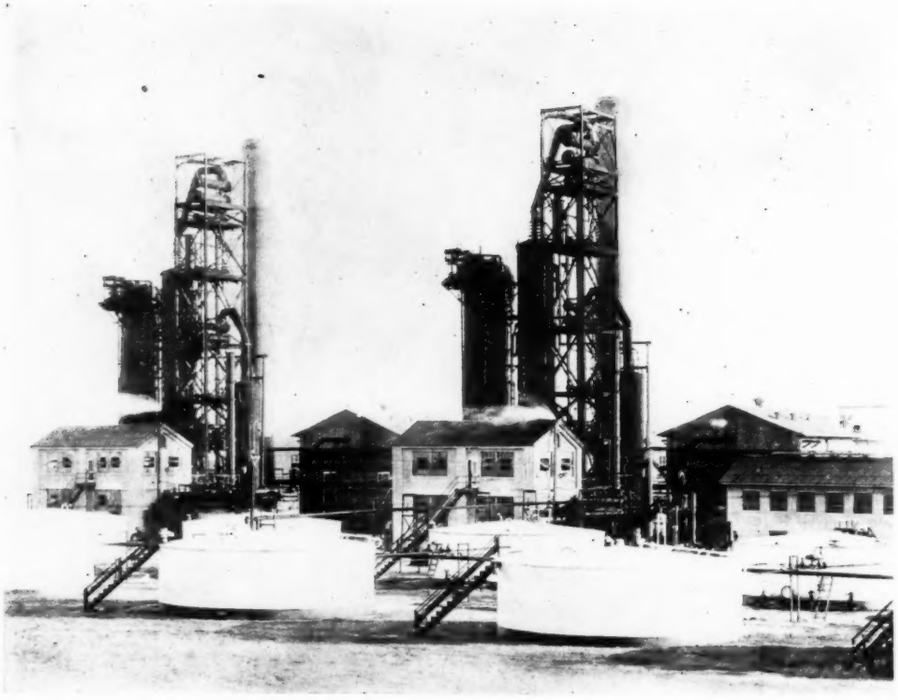
* 56 percent owned.

In addition to the above companies which are owned outright by The Texas Corporation except as noted it has a 50 percent interest in the California Petroleum Corporation of Venezuela, owns half the stock of The Texas-Empire Pipe Line Company and 49 percent of the Coltexo Corporation of Maryland.

House to house delivery of Texaco products in Belgium

The financial history of The Texas Corporation is simple but impressive. As previously related the Texas Fuel Company started business with a capital of $50,000 which was increased to $3,000,000 when The Texas Company was organized in 1902. Of this amount 4,000 shares of $100 par value each were issued for cash and the remainder were exchanged for property in 1902 and 1903. In 1905 the share capital was increased by issuance of $3,000,000 of stock sold for cash while in 1906 and again in 1907 additional shares amounting to $2,000,000 in each case were sold. In 1908 and 1909 additions of $1,000,000 each were made. Subsequent sales were $6,000,000 in 1910; $14,400,000 in 1916; $11,100,000 in 1917; $13,875,000 in 1918; $15,625,000 in 1919; $45,000,000 in 1920; $21,450,000 in 1921; $150,000 in 1926; $5,000,000 in 1928 and $35,104,675 in 1929. In 1913 shares of a par value of $3,000,000 were issued in exchange for property and in 1928-1930 an aggregate of $25,693,025 was issued in the same way, representing mainly the acquisition of California Petroleum. From the time of its organization to the end of 1930 the par value of stock sold for cash in The Texas Company was $176,580,926 while $31,293,025 par value was issued in acquiring property and $38,404,825 in stock dividends; a total par value of stock issued to the end of 1930 of $246,278,775. Much of the stock sold represented additional purchases by the early stockholders as much of it was obtained through the exercise of subscription rights. In 1929 the corporation issued $100,000,000 of 5 percent 15-year convertible debentures to provide for the expansion program then undertaken and which involved in 1929 and 1930 investment expenditures of 133,500,000. At the same time the authorized share capital was increased from $250,000,000 to $350,000,000 or from

Company tank cars are a familiar sight on railroads.



Atmospheric and vacuum units of 20,000 bbl. capacity at the Houston refinery

10,000,000 to 14,000,000 shares in order to provide for the conversion feature of the bonds and to have treasury stock available for future requirements.

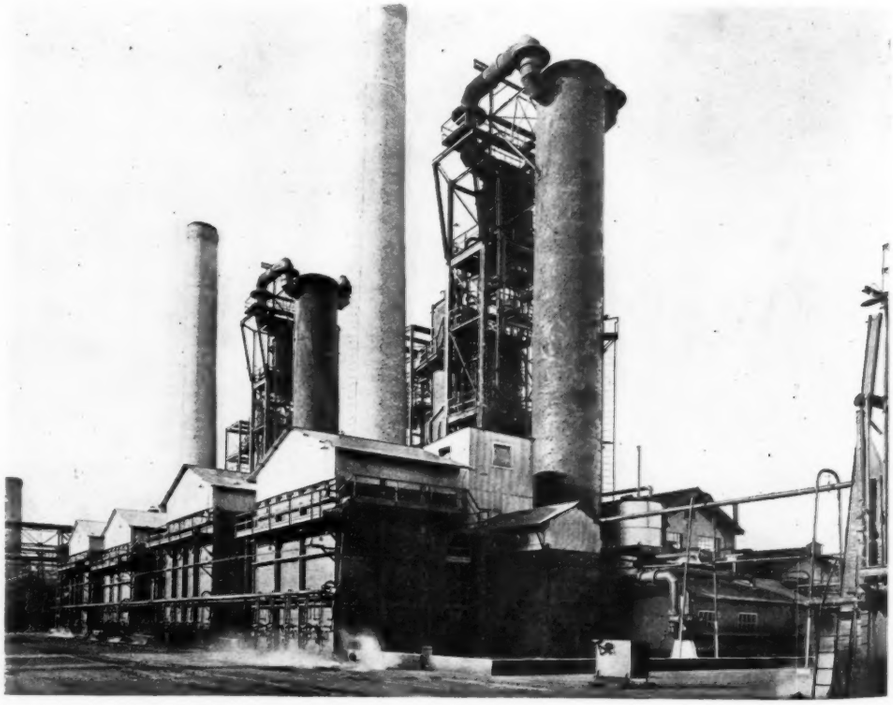
For 28 years The Texas Company has maintained an unbroken dividend record. Its first disbursement to shareholders was one of 10 percent in April 1903, one year after the organization of the company.

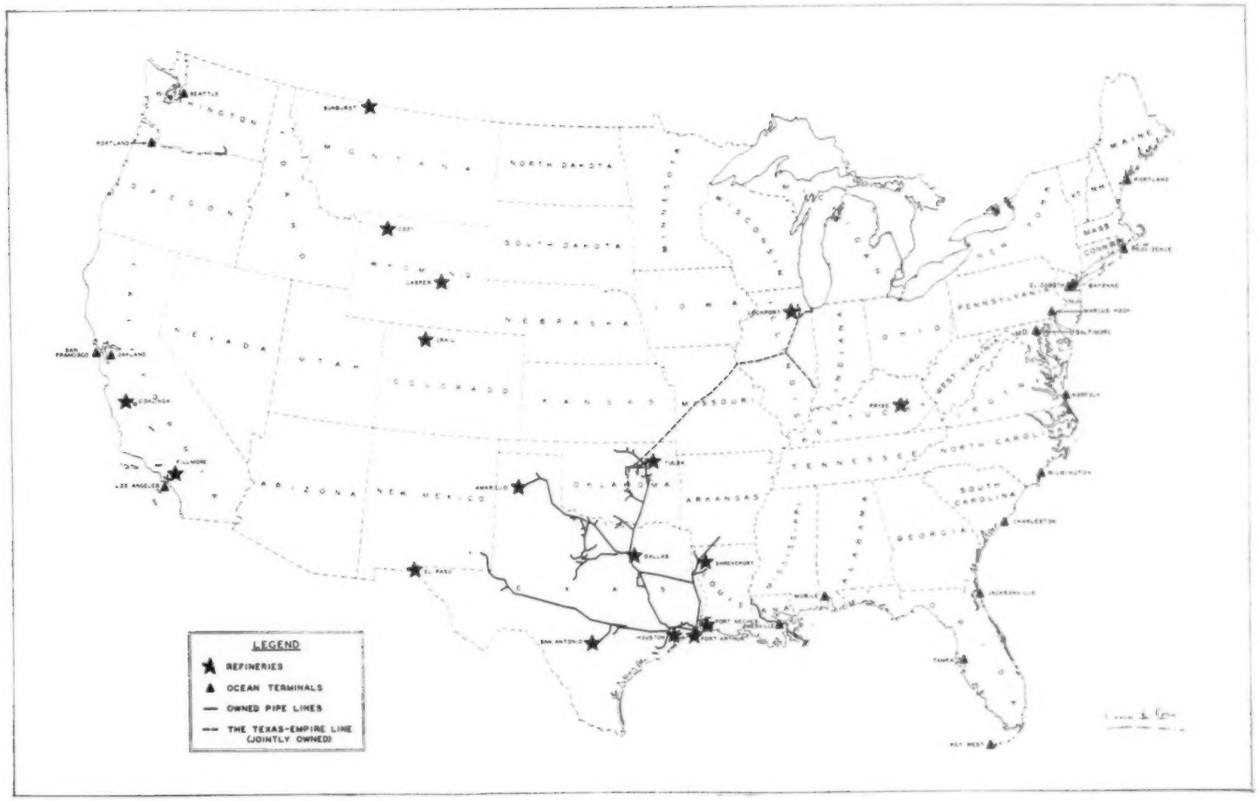
The list of stockholders who received this original dividend is published herewith. It shows that even at that early date the ownership of the company was widely distributed, with shareholders scattered from Maine to California. In the list are the names of many men who are still owners of large blocks of The Texas Corporation shares while in the case of others, members of their families have taken their places upon the rolls. The expansion of this early group of stockholders, numbering a little over 100, to the more than 75,000 persons who now compose the army of shareowners in The Texas Corporation is a fair measure of the company's growth.

Stockholders List in 1903:

Autry, J. L., Corsicana, Texas
Allen, Simeon, Fairhaven, Vt.
Black, J. F., Findlay, Ohio
Brooks, R. E., Beaumont, Texas
Bradley, C. A., Kansas City, Mo.
Beatty, C. W., Warren, Pa.
Bomar, D. T., Fort Worth, Texas
Booty, A. A., Georgetown, Texas
Booty, J. L., Georgetown, Texas
Booty, E. F., Georgetown, Taxes
Bunker, Albert, Yonkers, N. Y.
Craig, Geo. M., Port Authur, Texas
Crary, T. D., Binghamton, N. Y.
Cullinan, J. S., Beaumont, Texas
Corlim, C. C., Webster, Mass.
Crary, Jerry, Warren, Pa.
Crary, Roscoe, Chicago, Ill.
Crary, Cavert, Boston, Mass.
Curtis, H. H., New York, N. Y.
Call, D., Port Arthur, Texas
Cunningham, W. W., Beaumont, Texas
Campbell, W. T., Beaumont, Texas
Colligan, J. C., Beaumont, Texas
Clark, W. D., San Francisco, Cal.
Crawford, J. D., Marshall, Texas
Carmody, T. J., Beaumont, Texas
Donoghue, T. J., Beaumont, Texas
Davidge, Sam P., New York, N. Y.
Davidge, S. B., Newark Valley, N. Y.
Davidge, G. G., New York, N. Y.
Davidge, E. G., Middletown, N. Y.
Dearborn, George S., New York, N. Y.
Dunlop, W. B., Beaumont, Texas
Drake, John A., Chicago, Ill.
Dodge, C. M., New York, N. Y.
Douglass, E. D., New York, N. Y.
Edson, J. A., Denver, Colo.
Freeman, F. W., Beaumont, Texas
Ford, Simeon, New York, N. Y.
Furlong, Frank P., Beaumont, Texas
Gates, J. W., New York, N. Y.
Gates, Chas. G., New York, N. Y.
Gilbert, J. M., Beaumont, Texas
Garritt, W. G., Boston, Mass.
Gale, Loring R., Brooklyn, N. Y.
Garrison, C. M., New York, N. Y.
Hopkins, James, St. Louis, Mo.
Hoyt, Edw. C., New York, N. Y.
Hoyt, Theo. R., New York, N. Y.
Hoyt, W. S., New York, N. Y.
Hoyt, Geo. S., New York, N. Y.
Horton, Eugene, New York, N. Y.
Havemeyer, H. O., New York, N. Y.
Harding, Noah, Ft. Worth, Texas
Harris, Gates & Co., New York, N. Y.
Harris, Geo. B., Chicago, Ill.
Healy, Augustus A., New York, N. Y.
Holmes, R. C., Port Arthur, Texas
Hutchins, J. C., Chicago, Ill.
Horton, James, Middletown, N. Y.
Harris, J. F., New York, N. Y.

New two-stage atmospheric and vacuum units at the Port Arthur refinery.





Graphic representation of widespread distribution of The Texas Company's operations in the U. S.

Healy, Frank, New York, N. Y.
Jones, S. M., Toledo, Ohio
Jones, Morgan, Chicago, Ill.
Jones, J. E., Jonesboro, Ark.
Johnson, E. M., New York, N. Y.
Lapham, L. H., New York, N. Y.
Lapham, J. J., New York, N. Y.
Lambert, John, Chicago, Ill.
Miller, C. S., Pittsburgh, Pa.
Miglietta, A. C., Beaumont, Texas
Mollenhauer, F. D., New York, N. Y.
Munroe, Chester C., New York, N. Y.
Mitchell, J. J., Chicago, Ill.
Marshall, E. J., Beaumont, Texas
McKie, W. J., Corsicana, Texas
McKee, A. Hartupes, New York, N. Y.
Neely, C. H., Beaumont, Texas
O'Brien, Geo. C., Beaumont, Texas
Oliver, R., Beaumont, Texas
Pipkin, L. B., Beaumont, Texas
Pipkin, S. W., Beaumont, Texas
Prehn, Thos., New York, N. Y.
Pool, F., New York, N. Y.
Post, James H., New York, N. Y.
Plum, Jas. R., New York, N. Y.
Potter, H. W., Beaumont, Texas
Procter, W. C., Corsicana, Texas
Peck, Wallace F., New York, N. Y.
Ray, Jeff D., Corsicana, Texas
Rockwell, F. H., Warren, Pa.
Rudge, Geo., Jr., Youngstown, Ohio
Reimers, H., New York, N. Y.
Rose, Robt. H., Binghamton, N. Y.
Schlaet, Arnold, New York, N. Y.
Sharp, W. B., Beaumont, Texas
Sewall, Oscar F., New York, N. Y.
Sewall, Jos. C., Bath, Maine
Sewall, Harold M., Bath, Maine
Sewall, F. N., Kansas City, Mo.
Sewall, F. L., San Francisco, Calif.
Sewall, W. D., Bath, Maine
Sloan, J. W., Beaumont, Texas
Scott, Henry T., San Francisco, Calif.
Todd, C. H., Washington, Pa.
Vail, Geo. A., Orange, N. J.
Wright, E. G., Pittsburgh, Pa.
Weller, W. M., New York, N. Y.
Wiess, Wm., Beaumont, Texas

Since this initial dividend the annual payment made by the company to its shareholders never has fallen below 5 percent and has reached that figure only once. From 1920 the rate remained steadily at 12 percent until the payment of July 1, 1931, which was reduced to an 8 percent annual rate. In addition to the regular quarterly payments to shareholders, stock dividends declared in 1910, 1920 and 1927 aggregated $38,404,825. The policy of the company in regard to distribution of its earnings has been one of conservative liberality. At times it has drawn upon surplus to maintain dividends but never to an extent that has seriously impeded the growth of earned reserve which amounted to $135,000,000 at the end of 1930.

The Spirit of Texas

IN the development of the Texas oil fields at the beginning of the century a significant feature was the absence from the scene of the organization which had been historically associated with the previous growth of the petroleum industry. Although this was 10 years before the dissolution suit against Standard Oil the trust laws of Texas had barred the company from the state. As a result of this situation new organizations and new personalities were brought into the industry through the rise of the Gulf Coast section as a producing and refining territory. Some of the companies that originated in the Texas oil discoveries have since become affiliated with one or another of the members of the Standard Oil group but the great figures that emerged from the early rush to Texas have followed individual and independent orbits. Of this independent group the outstanding figure has been The Texas Company. Several factors have combined to give it this prominent place. It is partly the effect of early environment, partly the consequence of the rapid business and financial growth of the company which enabled it to outdistance most of the others formed during the same period. To a still greater degree it has been an expression of the positive and unusual personalities associated with the management of the company from its inception.

In this row of major company and independent service stations, prices for regular gasoline ranged from 7 to 9 gallons for $1, only one having the third pump. The expression "no tax" means that the price to the motorist is inclusive of State tax.

Fighting Price Cutters with a Third Grade

Opinion Is Divided as to the Merits of This Competitive Weapon in Gasoline Sales, But Its Use Is Spreading Rapidly in Many Parts of the United States—Views of Prominent Oil Men.

PRICE cutting is nothing new in the marketing of petroleum products; but a new method of meeting the competition of those dealers who persistently sell gasoline below the standard rate has appeared in the United States within the past few months. This consists in the adoption by many of the major oil companies of a third grade of gasoline, sometimes referred to as a "fighting grade," which is offered to consumers at the same rates charged by the price cutters.

While some oil company officials regard this as a backward step, since it emphasizes price rather than the quality of the products offered, others uphold it as the best means of beating the price cutters at their own game while still others declare that it has been forced upon them by the unfair competition to which they have been subjected. None of the companies maintaining the "third pump" makes it a policy to push the sale of the sub-standard grade. They simply offer it to those who wish to obtain their motor fuel at the lowest possible price while still maintaining their standard and super-grade products at established rates for discriminating purchasers.

While price wars and price-cutting are by no means confined to the United States, conditions there are such as to afford special opportunities to those who seek to attract trade by offering gasoline at abnormally low prices. Owing to the fact that regulations relating to the taxation and sale of gasoline are made, not by the Federal government, but by the various States, the American Union may be said to be not one market but forty-eight contiguous, but differing markets. Differences in the laws of adjoining States make it possible for not too conscientious dealers to evade payment of taxes by smuggling gasoline across state lines. Laxity in the laws or in their enforcement enables dishonest dealers in some sections to mix volatile gas with distillates or kerosene and to sell the mixture thus obtained at a low price, but still at a substantial profit. In many instances price cutting is done by dealers who maintain gasoline pumps as a side line to other forms of business and who are willing to sell gasoline at no profit in order to attract buyers to their other wares. As a result of these and other causes price cutting has become an evil so widespread as to call for energetic action on the part of legitimate sellers in order to protect themselves.

The situation created by the spread of underprice selling is described by the Standard Oil Company of California in the following words:

"The retail dealer has sold gasoline without a living wage. To bring these conditions to an end is of utmost consequence to all business, for they constitute a serious cause of general economic depression affecting every industry and reaching into every home. The principal menace is the price cutter who slashes prices solely to get his neighbor's business. The competitor who declines to join in the effort to reconstruct the industry will force the others to the levels that he establishes."

Apparently the first major company to establish the third price pump as a regular part of its marketing equipment was the Standard Oil of Indiana, which set up its first station of this kind several months ago. The company feels that its adoption of third price gasoline is giving satisfactory results. In the words of Allan Jackson, vice-president, "It has had a good acceptance without reducing our sales of Red Crown Ethyl gasoline, only moderately reducing our volume of sales of our Red Crown brand, and resulting in a total increase in sales since its introduction."

The Sinclair Refining Company quickly followed the example of Indiana Standard, which it was easily able to

do by reason of already having three sets of pumps and tanks at many stations for the sale of regular, H. C. Ethyl and aircraft brands. It was a simple matter to withdraw "aircraft" gasoline from the market and use the pumps for competitive green motor fuel, which the company markets at the same price as cut-rate stations.

"In the first place we did not want to put out this low price third grade," says Daniel T. Pierce, assistant to president E. W. Sinclair. "In fact we do not offer it except where we have to meet price competition. During the past five years we have spent $18,000,000 in new refinery equipment for improving the quality of gasoline. But price cutters have been drawing away our sales and increasing their business up to 40 percent, and even as high as 50 percent in the St. Louis district where competition is particularly severe. We find that the inclusion of the third pump is working out economically. On 15-cent high test gasoline the retailer has a margin of 3 cents; on 12-cent regular gasoline he receives 3½, while on the green 'fighting grade' his margin is but one, netting us 11 cents, 9½ cents and 9 cents respectively. As far as we are concerned the third grade has arrived to stay."

Confirmation of this viewpoint is found in a telegram sent by Harry Sinclair, chairman, to PETROLEUM WORLD, our associate journal of Los Angeles, Cal., in which he said:

"Assuming that it is necessary to meet competition rather than allow price cutters to increase their business, it has seemed best to us to provide a third gasoline sold at the lowest price and carrying a minimum margin to the dealer rather than reduce our premium and regular gasoline and thus destroy the whole structure. The third gasoline is a competitive product, and we do not advertise or push its sale. We simply provide our stations and dealers with a weapon to meet cut-throat competition while maintaining the price of our premium and regular gasolines. So far as our experience has gone the results of this policy are favorable since we have not experienced any decrease in the sales of the premium and regular gasoline while sales of the third gasoline have been going up."

R. C. Holmes, president of The Texas Corporation, states that his company was among the first to adopt the fighting grade gas. This was done originally in the St. Louis territory where price cutting was particularly acute. It had the effect of increasing the company's gallonage, thereby adding to its sales revenue and benefitting its overhead while at the same time it thinned the gallonage of the price cutters and made it more difficult for them to operate profitably.

The position of The Texas Corporation is that if a certain section of the public wants a cheap gas the company is willing to give it to them. It does not push the sale of this "fighting grade" and finds that it has not materially affected the volume of the company's standard brands. At the same time it provides an effective weapon for preventing price cutters from undermining this company's business.

Standard Oil of New Jersey has been watching the progress of the third pump movement closely and has introduced the fighting grade at a few points. As yet it has not installed any of these pumps in the state of New Jersey; but Standard of Pennsylvania has a number in operation in its territory at points where the competition of cut rate gasoline has been particularly severe. Standard of Louisiana has installed third pumps at various strategic points; but Standard of Delaware has limited itself thus far to one pump of this kind.

While many of the larger companies look upon the third grade gas as an effective means of checkmating the activities of persistent price cutters, and are prepared to employ it wherever necessary to meet this form of competition, there are others who feel that the expansion of its use represents an unhealthy tendency in gasoline marketing. A prominent exponent of this viewpoint is the Royal Dutch-Shell group. It has not adopted the third grade, but has preferred to reduce the price of its standard "400" gasoline in certain districts where other major companies have introduced "fighting" motor fuel. J. B. Aug. Kessler, one of the two joint managing-directors of the Royal Dutch-Shell group, writes to WORLD PETROLEUM from London, as follows:

"As to the question of the third pump I really think they are mistaking its importance in the U. S. A. There is an overproduction of gasoline; therefore, the thing to do is to see that we do not make more of it than we can help. By introducing a third grade with a high endpoint you really increase the total gasoline production obtained from the crude oil, with the result that you make over-production worse. In addition to that it requires still more equipment, and I think everybody will agree that there is already too much distributing equipment for gasoline. Under conditions as they are at present I think it is wrong to spend money on more wasteful distributing facilities.

"The duty of the industry to the public is to supply it with the very best quality of gasoline, and it is a step in the wrong direction to supply the public with a worse quality in times of overproduction. Surely the best way to compete is in quality rather than in price, because the price is already at such a low level that there is very little room left for further competition. The troubles with which we are faced at present are the troubles of over-production, and all subsidiary troubles spring from this over-production.

"Trying to improve matters by coming to an arrangement about the third pump or other matters which, although in themselves very important, are still of minor importance if they are compared with the basic ill of the industry—which is over-production—can be compared with trying to canalize a river with very small constructed locks designed for only half the quantity of water that is in the river. The locks may be perfect; but they will be useless, as there is far too much water in the river."

J. C. van Eck, President of the Shell Union Oil Corporation, the holding concern for the various Shell producing, manufacturing and marketing companies

(Continued on page 537)

Shell at 8 gallons and Socony at 9 gallons for $1—a typical scene in New York City district, on August 22, 1931. A few days later the Shell signs were changed to 9 for $1; apparently third-pump competition was the cause.

Can Overproduction Be Ended by Martial Law?

Stemming Flood of Cheap Crude Oil by Martial Law to Aid Stabilization of the Oil Situation. Texas Follows Oklahoma's Example, Closing Wells by Military Power.

RUSK-GREGG field of East Texas will go down in the petroleum history of the United States as the field most recklessly developed. Its surplus flood of cheap oil has affected the prices of crude oil and its products throughout the world. The greatest damage has been done to the domestic oil industry by causing crude prices in Texas to drop from $1.07 per barrel to as low as 2½ cents and correspondingly shattering price structures in other states. It stands as the development yielding smallest returns to producers, involving losses even to operators of 50,000 bbl. wells. The East Texas field was drilled and dug for pipe lines with war-like intensity. It has the unique distinction also of having brought about the declaration of martial law in two States and the introduction of troops into producing areas for shutting-in the wells. Thus, for the first time in the history of the country troops are employed to stem the supply and increase the price of a basic commodity, perhaps setting a precedent for similar economic action with other commodities whose over-production has caused, and is still causing, depression over wide areas.

WHILE the entire world, outside of Russia, has been striving to curtail crude oil production to balance it with the consumption of refined products, the new great field in East Texas has indulged in an orgy of wild drilling and production, demoralizing price structures, and even changing to some extent the direction of the international flow of oil. Recourse to martial law by the Governor of Texas, following similar action in Oklahoma, has stopped indiscriminate production, temporarily at least, and has changed marketing conditions for the better. Military control is intended to hold the situation in hand pending application of the law recently enacted by the state legislature of Texas, which is designed to maintain orderly procedure.

Since the Rusk-Gregg field was discovered in October, 1930, it has been developed at a tremendous pace, having 1,600 producing wells and 500 active operations on August 15, 1931. The total recovery by that date had reached an amazing figure of 56,000,000 bbl. The daily production officially reached 750,000 bbl. before the shut-in, but actually exceeded 1,000,000 bbl., as part of the production was not reported. This is a world record figure for any single pool, while the estimated potential is in excess of 7,000,000 bbl. per day.

Because of the large number of operators, small and large, the construction attending the oil field development more than kept pace with the drilling. An unprecedented building of pipe lines, both trunk and gathering, was undertaken and still continues, since such construction is the only means open to many operators for disposal of their production. To move the output via railroads a huge loading rack capacity was constructed—probably the largest ever erected. A large number of refineries was built in the field and in its immediate vicinity. Such tremendous construction activity resulted in the crude oil outlet of the Rusk-Gregg field reaching 1,000,000 bbl. per day capacity within 7½ months from the date of discovery of the first large wells in the field. Pipe lines were extended to the Gulf Coast, allowing sea exports to the outside world, while inter-connections with the older Mid-Continent pipe lines allowed movements of the East Texas crude to Oklahoma, Kansas and Great Lakes refineries.

The rapid increase in production, due to the failure of all proration efforts, steadily decreased the price of crude oil in the East Texas field, until the average price sank to the record level of 13 cents per barrel, with individual sales made as low as 2½ cents per barrel. These abnormal prices affected the price structure of the whole United States, reducing the prices in Oklahoma to 20 cents per barrel and in Southwest Texas to 10 cents per barrel, at the same time causing complete demoralization in gasoline quotations. The East Texas crude oil and gasoline were enabled to compete with and actually to undersell the Russian oil products of poorer grades on the European markets, more particularly in France, while in at least one instance a major American company began shipping East Texas crude to its great Caribbean refinery, partly shipping the refined products back to the United States, sending the balance to Great Britain and the Continent. Contracts for these shipments amounted to 2,000,000 bbl. Oddly enough, the gasoline returned to the United States is being officially classified as "imports of foreign gasoline" although manufactured by American skilled labor with American equipment from American raw material. Several Canadian refineries received shipments of East Texas crude by sea and by rail, a number of tankers being chartered for the purpose. The producers' strike in Oklahoma and Kansas, just preceding the declaration of martial law in Oklahoma, initiated by Governor "Alfalfa Bill" Murray a month ago, caused the East Texas crude to move to refineries located within and near the shut-in fields of those two States.

Huge losses resulted from the flood of East Texas crude. Operators in the

Photo. L. E. Bredberg

Headquarters, near Kilgore, of the martial law zone in East Texas.

Rusk-Gregg field received an estimated sum of $12,500,000 for their production of 56,000,000 bbl. in the first 7½ months, instead of the $56,000,000 which would have represented a fair price under orderly operation, indicating an apparent loss of $43,500,000. Huge waste of natural gas, estimated at 1,500,000,000 cu. ft. per day, occurred while the field was open. The building of unwarranted pipe lines and refineries likewise will result in heavy losses to their owners when the inevitable enforcement of proration leaves most of these projects without a supply of crude oil. Very large losses were inflicted on producers in other fields until the total daily production of the United States, though remaining equal to that of the summer of 1930, brought to the producers fully $2,000,000 per day less.

When the price of Oklahoma crude declined to 20 cents per bbl., Governor Murray declared martial law in all flush fields, shutting in all wells not affected by salt water, thereby reducing the Oklahoma production to about 250,000 bbl. per day from the former 500,000 bbl. Troops of the State National Guard occupied the fields to enforce the orders of the Governor. Two weeks later Governor R. S. Sterling of Texas followed the example of Governor Murray, and on August 16 declared martial law in the East Texas field, ordering all wells in that field shut in for a period of 30 days, to be opened after expiration of that period to produce only its allowable under proration regulations which will be fixed at around 275,000 bbl. per day. About 1,000 cavalrymen of the State National Guard occupied the Rusk-Gregg field to enforce the order.

At this writing the effects of the proration by military force in Oklahoma and Texas are not yet capable of being fully determined. The national production will show a decline of fully 900,000 bbl. per day, thus probably leading to considerably higher prices, possibly reaching the $1.00 per bbl. figure set by the two Governors. Prices well above the recent lows already are in effect and negotiations for further advances are under way. The refineries, especially those located in East Texas, are feeling the lack of crude oil supplies, and producers will not have the former recourse to temporary and permanent court injunctions in order to open their wells, such injunctions having been granted freely by minor courts during the previous peaceful method of attempted enforcement. In East Texas at one time at least fifteen companies operated under temporary injunctions. The penalty for opening wells in East Texas is a military jail sentence without bail until the expiration of the period of martial law. These conditions restrain operators from testing the constitutionality of the shut-down. Nor does the power pos-

Texas National Guardsmen shut oil flowing wells in East Texas.

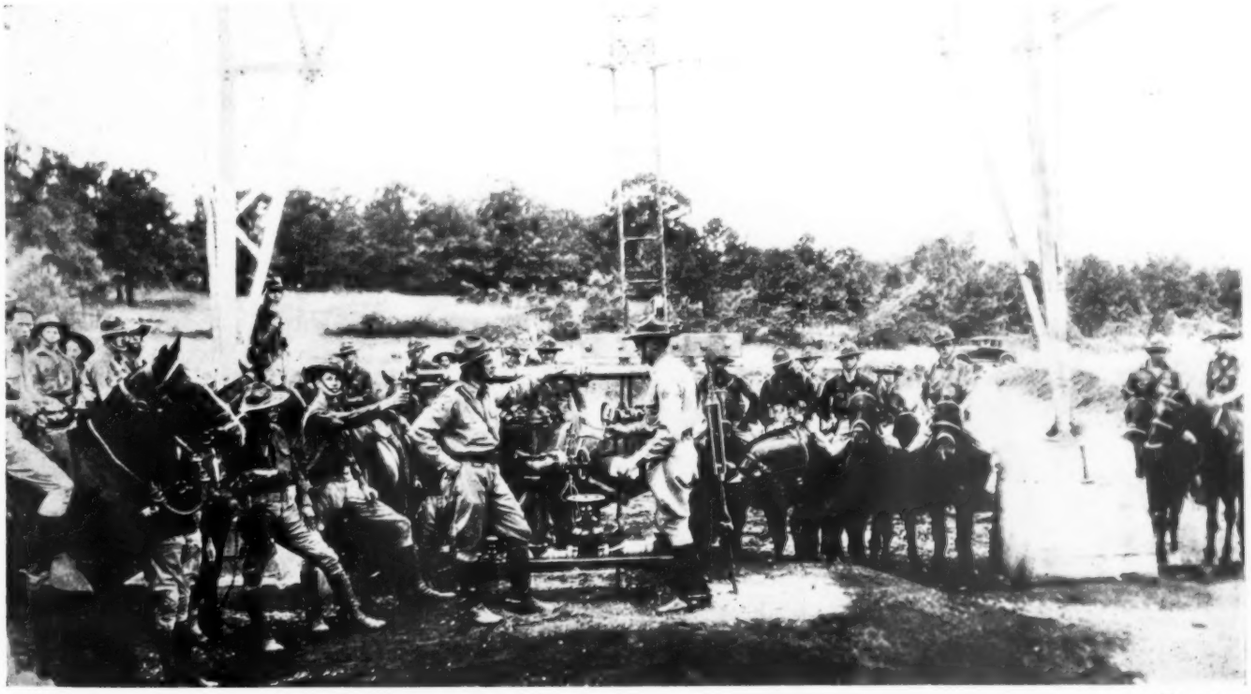


Photo. Acme

Photo. Keystone

Brigadier General Jacob F. Wolters, in command of military rule in the East Texas oilfields.

sessed by Brigadier-General J. F. Wolters encourage attempted interference by the legal departments of the oil operators.

The losses to the oil industry of the world caused by the uncontrolled production of the East Texas field have run into hundreds of millions of dollars. K. R. Kingsbury, president of the Standard Oil Company of California, expressed the opinion to WORLD PETROLEUM that, "had it been possible of accomplishment, the oil industry of this country could have afforded to pay any price necessary to acquire the East Texas field, and the operators there could equally have afforded to accept such price, in order to produce the field in an orderly manner when the oil is needed, much in the same manner as the Kettleman Hills will be produced."

The importance of the Rusk-Gregg field has been greatly exaggerated as to its potentiality as have most major fields in their early history. Comparisons were made with the Mexia-Powell fields of East Central Texas where well spacing averaged one well to three acres, and where sand conditions have been much more favorable than in Rusk-Gregg. Estimates ranged up to 3,000,000,000 bbl. of cumulative recovery, whereas, according to WORLD PETROLEUM'S representative in the field, it is not likely to go over 800,000,000 bbl., half of that amount being available by the natural flow, and the other half by pumping and by gas-lift. It is doubtful if Rusk-Gregg is the largest field in the United States; Kettleman Hills in California is richer, though smaller in area, while the Van Pool of East Central Texas will not fall far behind the Rusk-Gregg in cumulative recovery.

The duplication of certain Rusk-Gregg conditions, namely a deposit of large area with surface rights in small subdivisions and in inexperienced hands, appears at this time next to impossible in the United States. Shallow wells and easy drilling has enabled many holes to be drilled in a short time with second hand equipment and at low cost, in a manner virtually unknown in other great fields, except the extremely shallow Yates pool, which is under proration. Most likely, therefore, the East Texas boom is the last as far as its great momentum and its disastrous effects on the oil business generally are concerned, although it does not necessarily mean that the overproduction difficulties of the oil industry are at an end in that State or elsewhere.

Successful enforcement of proration, by whatever means accomplished, will definitely remove the Rusk-Gregg field from being a major threat to the oil industry, because sane production limits necessarily will force a realization of costs and actual underground conditions, these factors having been entirely overlooked by most of the operators in the high fever of rapid development. The probable outcome of the drastic military measures is that enforcement of proration by various State agencies under the laws passed by the local legislatures will be greatly facilitated, and possibly will mark the turning point to production of crude petroleum on a sounder basis.

Photo. Acme

Ross D. Sterling, governor of Texas, who stopped the wild flowing of wells in East Texas.

Summary of East Texas Developments to August 15, 1931

DEVELOPMENT—	
Field discovered on October 3, 1930	
First large well brought in, January 1931	10,000 bbl.
Total number of producing wells (Av. depth 3600 ft.)	1,600 wells
Average A. P. I. gravity of crude	40 Be.
Total number of active drilling operations	500
Estimated total number of wells to be completed	4,200
Maximum daily production actual (partly not reported)	1,000,000 bbl.
World Petroleum's estimate of daily potential	7,000,000 bbl.
Total recovery to-date	56,000,000 bbl.
Total proven area (definitely outlined)	93,000 acres
Average acres per well at this time	44
Recovery per acre today from the whole field	602
Eventual acres per well	22
INVESTMENTS—	
Total investment in drilling and equipment	$126,000,000
Estimated cost of leases	30,000,000
Estimated cost of wildcatting around the field	14,000,000
Estimated cost of flowing production (400,000,000 bbl. at 1½ cents per bbl.)	6,000,000
Estimated cost of pumping production (400,000,000 bbl. at 15 cents per bbl.	60,000,000
Total direct cost of development	$236,000,000
Estimated cumulative recovery	800,000,000 bbl.
Less 1/8th royalty	700,000,000 bbl.
Estimated cost of production	33.7c. per bbl.
Estimated gross receipts for oil produced to date	$12,500,000
ATTENDANT CONSTRUCTION—	
Trunk pipe lines	17 lines
Total mileage	1,400 miles
Total daily capacity	720,000 bbl.
Gathering	61 lines
Total mileage	350 miles
Total daily capacity	740,000 bbl.
RR loading racks—Total number	52
Estimated simultaneous tank car loading capcaity	2,000 tank cars
Estimated total daily capacity	850,000 bbl.
Estimated capacity railroad traffic (depending on distance of shipments)	200,000 to 250,000 bbl. daily
Refineries—Total	19
Estimated daily capacity	75,000 bbl.
Total estimated daily outlet capacity	1,000,000 bbl.

Oil Industry Needs World Cooperation

Benefits of Attempted Conservation by Individual Countries Nullified by Lack of Synchronization. U. S. Logical Leader in Cooperative Movement.

By J. B. Aug. Kessler

J. B. AUG. KESSLER, joint managing director of the Royal Dutch-Shell group, has spent his entire life in intimate association with the petroleum industry. A native of Holland and a son of the founder of the Royal Dutch Company, he was educated as an engineer, received extensive practical training and had a varied experience as a representative of the Royal Dutch Company in Russia. Following this he was assistant to Sir Henri Deterding.

In addition to his engineer's passion for fact and precision, Mr. Kessler has a finely balanced sense of the value of economic factors, keen analytical ability and a detailed knowledge of the petroleum industry the world over, which enable him to view present conditions and their causes in sound perspective.

ALL the troubles with which the oil industry is confronted at present are due to the fact that production is far greater than consumption. That difficulty, serious enough in itself, is not all we have to face. The potential production of the oil industry is so large that, without serious co-operative effort among all factors in the industry, this lack of balance between supply and demand may last for years.

During the past two years there really never has been a moment when members of the oil industry in one part of the world or another have not tried to do something constructive to improve conditions. Sometimes they tried to deal with marketing problems. Any temporary accomplishment in this direction eventually broke down—and was bound to break down—under the pressure of over-production. Sometimes production itself was tackled, and at one moment it looked as though the industry were really going to be successful in bringing production and consumption into balance.

Cause of 1930 Failure

THAT was a year ago. Then there was no over-production anywhere, and the stock position was improving every day. Every oil-producing country in the world, with the exception of Russia, had submitted to conservation. At that time the industry did not reward the crude oil producer for his loyalty to conservation; that is to say, crude oil prices were low. These low prices were, to a large extent, the penalty for having kept crude prices too high during the years previous to 1930 when there was overproduction and stocks were accumulating. The result of the drop in crude prices in the Autumn of 1930 was that the prices of petroleum products had to come down. This created dissatisfaction with conservation among world producers the result of which was that Roumanian conservation came to an end. This brought Roumanian f.o.b. prices down with a rush, so that for many months European markets were ruled entirely by Roumanian prices and not by Gulf prices. This pulled down Gulf prices still further, which again brought down crude oil prices in the United States.

J. B. Aug. Kessler, joint managing-director of the Royal Dutch-Shell oil group.

Unfortunately it was just at that moment when the producer had realized how poorly he was rewarded for his support of conservation that the East Texas field was brought in. Whereas the Oklahoma City producers had restricted their production so that it was never above 10 percent of the potential capacity, the East Texas producers refused to "play the game" as the Oklahoma City producers had done. The result is the present disastrous over-production of crude oil.

Although the laws of the United States do not make it easy to bring about order in the industry—in fact I think they are a serious handicap to that object—this handicap must not be over-rated, because it cannot be denied that at this time last year, with the same laws, we were getting nearer and nearer to the goal of success, as there was no over-production anywhere except over-export from Russia, and reason prevailed with the producers all over the world with the exception of Russia. With a little more systematic initiative shown at that time we might have consolidated the results then achieved. Such initiative among other things should have been directed toward restriction of drilling. This was possible then and it is possible now. Unnecessary and uneconomical drilling increases more and more the potential production which ultimately is bound to undo any conservation arrangement.

Now that reason is no longer supreme among producers, of course, the handicap imposed by the laws of the United States is more conspicuous than it ever has been before, but we should not allow these laws to be an excuse for not trying to deal legally and properly with things to the best of our ability.

We must try to get back to the position in which we were this time last year —that is to say, into a position of world conservation combined with drastic restriction in drilling. I know that is a "tall order," but still it can be done. If we do not do it, and if we let things slide without a serious co-operative effort

to avoid the natural results of a wasteful and long drawn out over-production (and subsequent possible under-production) then the inevitable will happen; individuals, companies and even countries will be ruined, and the industry, not having led itself, will be led by others outside the industry, namely Governments. I do not think anybody (whether he be producer or consumer) will enjoy that much!

Futility of Local Efforts

WHEN in the past efforts were made to bring about conservation agreements they never were tackled on any broader scale than country-wide, and in fact, in the United States not broader than State-wide. What was the logical result? It was that when one part of the industry was making the sacrifice of conservation the other parts were doing all they could to destroy the beneficial results of those sacrifices. Take, for instance, at present the case of California and Oklahoma. California is "playing the game" for the full 100 percent, and the shut-down movement in Oklahoma is gaining ground while East Texas is running wild.* If this continues the result is bound to be that Texas oil will find its way to California and to the refineries that normally run Oklahoma crude. That will blow up Californian and Oklahoman conservation, and by the time that has happened very likely East Texas will go in for conservation, and that will in turn be blown up by Californian and Oklahoman over-production.

Even if the whole of the United States would subscribe to conservation and limit its production to a certain figure which should be smaller than the requirements of the interior markets and the export markets supplied by the United States (in order to work off excess stocks) even then the results would be questionable if other oil producing countries would not subscribe to conservation at the same time, also producing less than their outlet — again in order to work off the excessive stocks. Let us suppose, for instance, that Venezuela is over-producing and the United States is not. Whether this Venezuelan production is to a large extent imported into the United States or whether it is not, it is bound to affect markets where a considerable quantity of American products are sold (say, for instance, Europe) and this will bring down the f.o.b. Gulf quotations to such an extent that the United States producer will not be able to see why he should continue to take upon himself the burden of conservation. This (and some other things about which more later on) is what has happened in the past, and what (in the interests of everybody) must be avoided in the future.

Statistics will help to make my point clear.

Let us take production in the United States during 1928 and the first 8 months of 1929 and stocks during the same period:

U. S. Production and Stocks 1928-29

	Bbls. per day Average for Month	Stocks of Crude and all products bbls.
1928		
January	2,348,000	607,594,000
February	2,364,000	614,469,000
March	2,404,000	620,388,000
April	2,413,000	623,370,000
May	2,428,000	623,784,000
June	2,423,000	622,901,000
July	2,438,000	619,214,000
August	2,510,000	616,328,000
September	2,549,000	613,919,000
October	2,573,000	613,958,000
November	2,537,000	615,103,000
December	2,564,000	621,010,000
1929		
January	2,647,000	631,692,000
February	2,695,000	641,915,000
March	2,660,000	653,000,000
April	2,680,000	658,953,000
May	2,726,000	662,568,000
June	2,780,000	668,816,000
July	2,945,000	673,801,000
August	2,973,000	678,673,000

The increasing production and the steadily growing stocks induced the industry in the United States to consider and apply conservation, and from the quantity point of view the results were very satisfactory. Stocks began gradually to diminish. Production and stocks during the last four months of 1929 and the whole of 1930 were as follows:

U. S. Production and Stocks 1929-30

1929	Bbls. per Day Average for Month	Stocks of Crude and all Products bbls.
September	2,915,000	684,171,000
October	2,853,000	688,750,000
November	2,625,000	685,708,000
December	2,610,000	689,166,000
1930		
January	2,572,000	693,833,000
February	2,652,000	699,377,000
March	2,503,000	700,681,000
April	2,573,000	698,689,000
May	2,592,000	700,142,000
June	2,564,000	697,329,000
July	2,469,000	692,887,000
August	2,415,000	685,857,000
September	2,366,000	677,972,000
October	2,345,000	674,294,000
November	2,272,000	671,826,000
December	2,161,000	665,870,000

The movements in oil prices were not so satisfactory. The prices of the most representative crude oil in the Mid-Continent during 1928, 1929 and 1930 were as follows:

Range of Mid-Continent Crude Prices

36 deg. A. P. I. Gravity Crude per bbl.

Month	1928 (Dollars)	1929 (Dollars)	1930 (Dollars)
January	1.28	1.20	1.45
February	1.28	1.20	1.20
March	1.28	1.20	1.20
April	1.28	1.20	1.29
May	1.28	1.45	1.29
June	1.28	1.45	1.29
July	1.36	1.45	1.29
August	1.36	1.45	1.29
September	1.36	1.45	1.29
October	1.36	1.45	0.95
November	1.36	1.45	0.95
December	1.36	1.45	0.95

We see here the very surprising occurrence that during the time when production was increasing and the stock position getting worse and worse, prices actually went up, and during the period when conservation was more and more energetically applied, and the stock position improving every month, prices were drastically reduced! This, in my opinion, is the underlying cause of our present troubles. I want to explain this in what follows:

Let us first see the movements in the price of 64 deg. Beaumé gasoline in Group 3, which shows a picture very similar to the changes in crude prices:

Range of Gasoline Prices

64 deg. Beaume Gasoline, cents per gal.

Month	1928	1929	1930
January	6¾	8¾	7¾
February	7	8	7½
March	7¼	8	7½
April	7¼	8	7¾
May	7½	8½	7¾
June	8¼	9½	7¾
July	8½	9¾	7
August	10¾	8½	6¾
September	11	8¼	7
October	11	8¼	6¼
November	10	8	5¼
December	9½	8	5¼

The falling crude quotations during the period of conservation from September, 1929 to the end of 1930 caused the drop in gasoline quotations. The refiner who paid little for his crude, of course, could sell his gasoline at a low price. The big crude purchasing companies showing their lack of confidence in the situation by dropping the prices quoted for crude oil (notwithstanding conservation and an improving stock position) one could hardly expect the refiners to show greater confidence by keeping their gasoline prices up to a reasonable level.

It is true that during the latter half of the period under review (January, 1928 to December, 1930), that is to say from January, 1929 to December, 1930 (just when the Export Association functioned!) the gasoline stocks had a tendency to be larger and sometimes considerably larger than at the same time a year earlier. First the strength and then, after August 1929, the weakness

* This article was written before the closing down of the East Texas field through the application of martial law.—Editor.

in gasoline prices is therefore better to be understood than the original strength followed by weakness in crude prices. It was the crude producer during the latter part of 1929 and the whole of 1930 who showed great loyalty to the conservation movement and he did not get his reward. The output of refinery products in the desired proportions might have been kept in check by a logical price level of the refinery products, both in Group 3 and f.o.b. Gulf. This would soon have reduced the inflated gasoline stocks, and it would have prolonged the life of the Export Association.

From January, 1928 to January, 1929, inclusive the f.o.b. Gulf quotations for 64 deg. Beaumé gasoline showed the following picture:

F. O. B. Gulf Quotations 64 Deg. Beaume Gasoline

Month	Price (cents per gal.)
January (1928)	8¼
February	8¼
March	8½
April	9
May	9½
June	9¾
July	11
August	12¼
September	12
October	10⅞
November	11⅛
December	10¾
January (1929)	9⅝

These prices show in general the same strong tendency as Group 3 during the same period although daily production rose from 2,348,000 bbls. to 2,647,000 bbls.

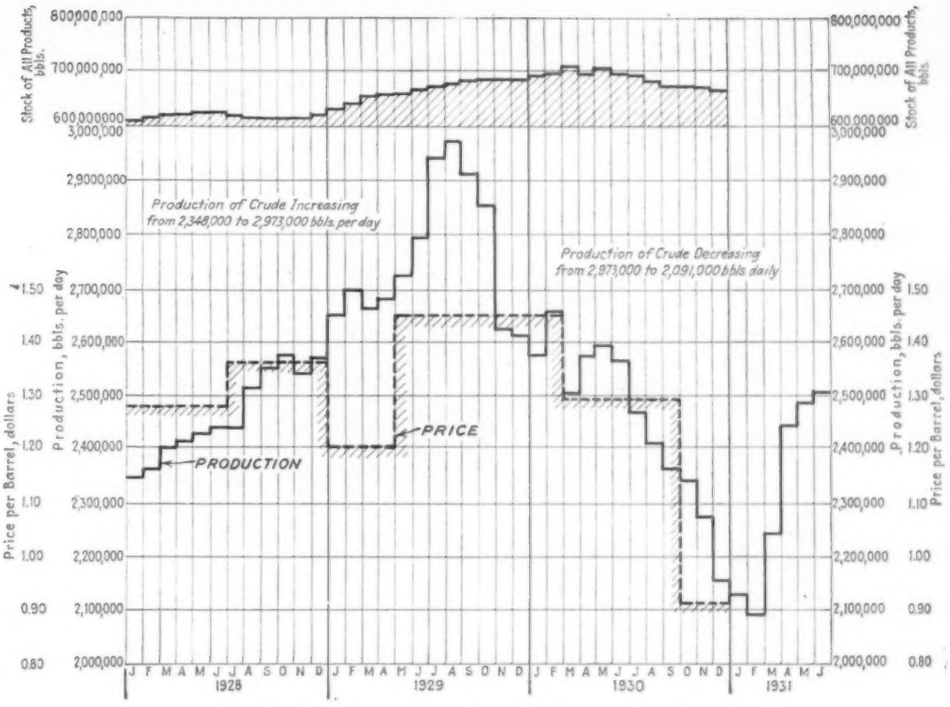
In Febuary, 1929 the United States Export Association was formed. The result was f.o.b. Gulf prices for 64 deg. Beaumé gasoline remained stationary at 10 cents per gallon from February, 1929 to January, 1930 when they changed to 9.5 cents per gallon.

WE see that the Gulf price movement, although influenced by the stabilizing effect of the Export Association, showed the same tendency as Group 3, especially during the later months, when many export sales were closed well below the official Gulf price, as a result of the weakness in Group 3 and in the organization of the Export Association.

It is interesting to follow what happened in the mean time in Roumania.

It is possibly not generally realized in the United States to what extent other export markets influence Gulf quotations, but still it is a fact that prices f. o. b. Constanza (Roumania) do influence Gulf quotations very markedly. Oil shipped abroad from Roumania and oil shipped abroad from the Gulf compete in the same markets (Europe) and it is therefore only natural that the influence of f. o. b. Constanza quotations on f. o. b. Gulf quotations and vice versa is very considerable.

Although there was a gradual rise in production in Roumania the figures given show that it was not very considerable. From the beginning of 1930 the rise became more marked.



Relation of price to production and stocks

Increasing Roumanian production (and therefore exports) during the period when the United States producers were seriously applying conservation threatened to undermine the American Export Association. It was in order to protect that Association that certain proposals were made for oil conservation, and on July 21, 1930 the Roumanian oil industry brought its production into balance with its natural outlet, which means that with the exception of Russia world conservation had come into being.

Production in Roumania

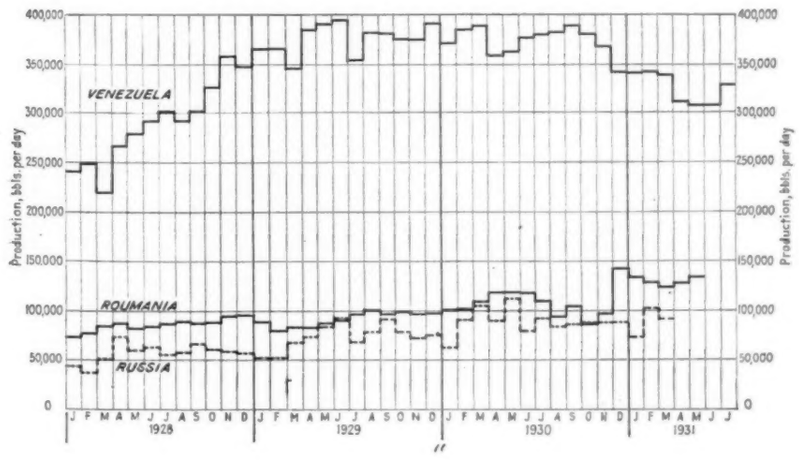
Month	Bbl. per day 1929	Bbl. per day 1930	Bbl. per day 1931
January	89,300	100,700	135,400
February	80,900	102,800	123,800
March	84,800	111,300	124,400
April	83,900	119,700	129,300
May	87,400	120,800	134,900
June	91,600	119,800	.....
July	97,300	115,100	.....
August	101,200	95,200	.....
September	98,000	106,400	.....
October	98,700	87,700	.....
November	97,900	97,900	.....
December	99,000	114,000	.....

The immediate beneficial effect of this conservation movement in Roumania is shown by the following price figures:

730 Gasoline f. o. b. Constanza

1930	(cents per gal.)
January	10.99
February	10.4
March	10.5
April	10.6
May	10.5
June	10.1
July	9.9
August	10.9
September	10.9

Comparison of Russian exports with Roumanian and Venezuelan production



In the meantime, that is to say in the Autumn of 1930, as we have seen, not only Group 3 prices of gasoline in the United States but also f. o. b. Gulf prices dropped constantly. The co-operation within the Export Association grew less and less, and in October, 1930, the Export Association stopped quoting prices. The result is seen from the following figures for the last four months of 1930:

64 deg. Beaume Gasoline f. o. b. Gulf

1930	(cents. per gal.)
September	9.5
October	8
November	7.5
December	6.38

These falling f. o. b. Gulf prices of course brought down f. o. b. Constanza quotations:

730 Gasoline f. o. b. Constanza

1930	(cents. per gal.)
September	10.9
October	10.1
November	7.4
December	6.0

We see that by October, 1930, as a result of dropping Gulf quotations, the price of 730 Gasoline f. o. b. Constanza had come down to a figure not higher than it was in the month of June before Roumania accepted conservation, and it was therefore quite understandable that the Roumanian oil producers began to lose faith in conservation. This grew worse in November. They reasoned that, before conservation, with a big production, the price they received for their export products was not lower (was in fact higher) than it was during conservation. They did not (and could not) realize what had caused this drop in f. o. b. quotations in Constanza. They could not know the situation in the United States, and even if they did realize to the full extent the reaction of American prices on Roumanian prices, they could not understand why there was any necessity for prices in the United States to drop during a period of very strict conservation and constantly improving stock position.

Roumania Abandons Conservation

The result was that on December 1, 1930, the Roumanian oil industry gave up conservation, and up went production as the accompanying table shows.

We were now back to over-production in Roumania. Its affect was a very considerable drop in f. o. b. Constanza quotations—such a drop that the lead of the export markets was taken away from the Gulf and transferred to Roumania.

730 Gasoline f. o. b. Constanza

Month	(cents per gal.)
October (1930)	10.1
November	7.4
December	6.0
January (1931)	5.1
February	4.4
March	4.5
April	4.6
May	4.6

During this whole period of the Spring of 1931 the laying down cost of gasoline on the European markets from Roumania was considerably cheaper than the laying down cost from the Gulf. Consequently prices in the Gulf had to follow f. o. b. Constanza prices:

64 Deg. Beaume Gasoline f. o. b. Gulf

Month	(cents. per gal.)
October (1930)	8
November	7.5
December	6.38
January (1931)	5.94
February	6.13
March	5.94
April	5.50
May	5.13

We see that, however much Gulf prices dropped, Roumanian prices dropped more, and it was therefore during this period of the Spring of 1931 that the European markets of consumption were entirely governed by Roumanian f. o. b. quotations, and that f. o. b. Gulf prices simply had to follow Roumania's lead.

The above figures show that, first during a period of three months f. o. b., Gulf quotations brought down the f. o. b. Constanza quotations (September, 1930—November, 1930), and after that, the f. o. b. Constanza quotations, during a period of six months, brought down the f. o. b. Gulf quotations (December, 1930 to May, 1931).

East Texas Enters the Picture

THE honor of returning the lead in the further destruction of the price level in the United States was reserved for East Texas. That field had in the meantime been brought in. One cannot be surprised that the East Texas producers, having seen the slight financial advantage which the producers in the Oklahoma City field had derived from adhering to conservation, were not inclined to submit to the same practice. The result was the recent increasing production in the United States and the present very serious over-production. The production in the United States for the first seven months of 1931 was as follows:

U. S. 1931 Production

	Bbl. per day
January	2,129,000
February	2,166,000
March	2,239,000
April	2,437,000
May	2,489,000
June	2,467,000
July (est.)	2,493,000

Although Venezuela, of course, has grown into a very important producing country, during the period 1929 to the middle of 1931 her production has, in general, been well controlled, and has not affected the markets much. That production was as follows:

Production in Venezuela

	Barrels per day			
Month	1928	1929	1930	1931
January	241,836	366,446	370,900	341,689
February	240,706	366,530	385,734	342,005
March	252,337	345,348	389,578	338,021
April	267,156	386,421	359,419	311,514
May	248,645	390,615	363,646	309,760
June	293,461	395,059	377,026	309,130
July	302,496	353,337	380,433	330,000
August	293,310	381,529	382,033	.....
September	305,916	381,220	389,749	.....
October	327,969	376,315	380,784	.....
November	356,085	375,413	368,234	.....
December	348,470	392,149	342,550	.....

We see that the production has never been as high as 400,000 bbl. per day. Before September, 1929, when the United States started the policy of conservation, and after September, 1929 up to October 30, 1930 there was very little change in the production of Venezuela. Although the United States, and later on Roumania, after having allowed their respective productions to run wild, went in for conservation, Venezuela kept its own production at an approximately constant level, notwithstanding that an important new field was brought into production. Of course Venezuela has never over-produced as the United States did in 1929, and Roumania in the first half of 1930, although her operators could easily have produced during the whole period under consideration considerably more than they did. One cannot blame the Venezuelan producers for considering that they had done their share by keeping their production all the time below 400,000 bbl. per day. By the time Roumania dropped conservation, and East Texas was brought in, in other words, by the time the United States and Roumania both gave up conservation, Venezuela decided to reduce its production for the common good! Statistics of production in Venezuela during the last two two months of 1930 and the first six months of 1931 show this.

Venezuelan Regulation

IF the sacrifice which the Venezuelans took upon themselves had synchronized with the period when the United States producers and the Roumanian producers

applied conservation, the beneficial result. would not have been wasted. The lack of organization in the industry, as a result of which each country in turn makes sacrifices, but never all at the same time, is decidedly pathetic! It is somewhat comparable with the activities of the allies on the western front in the World War before there was unity of command. It is not unnatural that from July 1, 1931, one of the largest producers in Venezuela formed the opinion that it was no use submitting to such drastic reduction of production if at the same time East Texas was producing hundreds of thousands of barrels for which there was no outlet. The result has been a larger production in Venezuela in July of this year than in June, as the following figures show:

June (est.) 309,130 bbl. per day
July (est.) 330,000 bbl. per day

Russia

ANOTHER country about which I must say a few words is Russia. The Russians have never subscribed to conservation. On the contrary they are boasting about their increasing production. This boast is a pretty poor one, because, of course, any of the other producing countries could easily have increased its production far more than the Russians if it had wanted to do so. In fact, when one considers that, although the Russians have tried to increase their production as much as they could it has gone up only from 200,000 bbl. per day in the beginning of 1928 to 400,000 bbl. per day in the beginning of 1931 one cannot help feeling what a very poor performance this has been. The point that most interests us here, however, is to what extent did the Russian exports affect world markets? The exports of all products from Russia from 1928 to March, 1931, in barrels per day, were as follows:

Russian Exports, of All Products

	Barrels per day			
Month	1928	1929	1930	1931
January	43,029	50,659	62,524	72,807
February	37,562	50,736	91,112	103,775
March	50,617	67,440	107,331	93,618
April	72,394	74,823	90,244	.....
May	58,793	83,090	112,406	.....
June	62,587	87,262	79,996	.....
July	55,517	68,054	92,981	.....
August	57,673	78,358	84,357	.....
September	66,808	92,834	85,876	.....
October	61,733	79,079	87,458	.....
November	59,213	72,289	85,925	.....
December	58,555	76,699	89,691	.....

We see that over this whole period the increase in Russian exports was not more than, say, 50,000 bbl. per day. The increase in Roumanian production over the same period was 64,000 bbl. per day, while the increase in exports over that period was 85,000 bbl. per day.

The increasing exports from Roumania must therefore have had more effect on world markets than the increasing Russian exports. If one compares the increase in Russian exports of 50,000 bbl. per day between January, 1928 and March, 1931 with the increased production in the United States, not over a period of more than three years, but over a period of only five months (the production in the United States in January, 1931 was 2,129,000 bbl. per day, and in May, 1931, it was 2,489,000 bbl. per day, an increase of 360,000 bbl. per day) it is clear that the refusal of the Russians to show that sense of world co-operation that all the other producing countries have shown up to now (although it must be admitted, as a result of lack of co-ordination with not very gratifying results) should be no excuse for not trying to save the industry from the disastrous results which further lack of co-operation between the different members of the industry is bound to bring about.

I have not spoken about the countries where a single main oil company occupies a predominating position (Colombia, Persia, Dutch East Indies), because in all those countries during the whole period under consideration the production has been stabilized or even reduced. In fact one can say that in those countries the policy of conservation has been applied more rigidly than in any other part of the world. Mexico was not discussed, as its production has been constantly on the down grade.

I have not spoken about countries of production of secondary importance (Peru, Trinidad, etc.), because of their very small influence on world markets. Neither have I spoken about markets that supply only their own needs (Argentina, Poland, etc.) because, even if their production had increased to a marked extent, which it did not, it goes without saying that such countries should not be requested to restrict their production as long as they do not yet supply their own internal trade.

Conclusions

MY conclusion is that at this time last year we were very near to a successful world crude oil conservation. We failed however, to show the necessary constructive determination to consolidate that position. As a result of high crude oil prices during a period of over-production and growing stocks (which high prices accentuated the over-production, and saddled the industry with such huge stocks that it may take years to work them off) followed by low crude oil prices during a period when there was no over-production and when the stock position was improving, we undid the Export Association, and we allowed Roumania to slip back into over-production, which destroyed the already undermined price level. This meant that when East Texas was brought in we had nothing to show the producer there that the results of conservation would compensate him financially for the sacrifice. And thus we were landed where we are at present. We must now repair the damage. That is more difficult than to have avoided it.

Not only the financial, commercial and industrial, but also the political situation of a large part of the world must be considered as so precarious, and so seriously endangered by the disastrous over-production of some of the raw materials, including oil, from which they derive their income, that it is our duty not only to ourselves but to the world as a whole to put the oil industry's house in order by international co-operation. We must bring world production down to such a level that not only will the present over-production come to an end and excessive stocks gradually be worked off, but that drilling will be brought into line with the required production. Only a world arrangement can achieve this. Local arrangements mean that by turns we make sacrifices, but, by lack of synchronization, never reach our goal.

A difficulty in the world-wide application of conservation may be thought to be the policy followed by the Russians, but the figures given above show that the influence of Russian production on the world's markets must not be exaggerated. In addition to that, the Russians so greatly need a paying price for their exports if they are to avoid a financial disaster that they will be most reluctant to destroy the better price structure by attempting to increase their own exports.

The United States, being by far the largest oil-producing country, the producers there must logically take the lead. Without them nothing can be done. The development of the world since the War has been such as to make everybody look to American initiative, just as much in oil matters as in international politics.

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Owing to the very great pressure on editorial space this month, the third article on "Water White Color in Gasoline" will not be published until the October issue of WORLD PETROLEUM.

The Strasburg Lubrication Congress

Variety and Position of Delegates Indicates Importance Attached to Problems of Lubrication by Leading Industrial and Educational Organizations in Europe and the United States

STRASBURG, FRANCE.

A LUBRICATION CONGRESS composed of official, industrial, and scientific organizations from nine European countries and the United States was held at Strasburg from July 20 to 26 of this year. The Congress, presided over by M. Dumanois, in charge of the Technical Department of the Office National des Combustibles Liquides, confined its attention to technical and scientific matters, and avoided discussion of economic questions such as marketing.

This official and international Congress is the continuation of an interesting meeting held in Bordeaux in 1930 by a group of industrialists who claim the honor of being the first to emphasize the importance of lubrication to the industrial world and to national economy. The Congress, this year, was organized by the Office National des Combustibles Liquides, and under the direction of Louis Pineau deals with all problems relating to petroleum in France, and by the Ecole National du Petrole, which was founded in Strasburg in 1924.

In recent years a definite lubricating policy has begun to emerge from the mass of information available on the laws of lubrication, although the actual composition and properties of lubricants are still very little known. Interest in the subject was apparent on the part of the Air and Navy Departments, the Compagnie Francaise des Petroles, technical schools, universities, chambers of commerce, and industrial associations, as well as prominent industrialists, who were present to meet representatives of producing and importing firms. Interest and enthusiasm was displayed by numerous other countries who sent delegates, including: from Germany, Professors Stern, Tausz and Erk, Mr. Wolkmann and Dr. Muller, representing the "Verband Deutscher Chemiker"; Messrs. Southcomb and Kelly from England; Dr. Batta of Liège and Mr. Vincent of the Belgium Railways Companies; Dr. Bohnenblust of the B.B.C. Laboratories, Baden, Switzerland; Mr. Herschell of the Bureau of Standards, Washington.

Communications were divided up into three sections: studies; manufacture; and use of oils; but the first section had much the longest program. This program revealed the effort being made at present by numerous laboratories, especially the Ecole de Strasbourg, towards acquiring greater knowledge of the physico-chemical structure of mineral oils.

Dr. Tausz of Karlsruhe spoke on his work concerning viscosity changes obtained by diluting oils into certain solutions, particularly toluol, and drew conclusions therefrom as regards lubricating values.

Other speakers had studied the chemical constitution of oils by either analysis —as in the case of Messrs. Louis and Benoit of the Ecole du Pétrole—or by synthesis—as in the case of Professor Hugel, Strasburg, who has manufactured heavy molecules of known composition by treating pitch with water at high temperatures and comparing these with various industrial oils. Dr. Erk, of Berlin, spoke on a comparative study he had made of oil specifications at low temperatures.

Mr. Vellinger, of Strasburg, rendered an account of interesting researches made in regard to interfacial tension, the measurement of which is proposed as a refinement and alteration test instead of the present method of measuring the emulsification tendency, which is only conclusive on used oils.

The measurement of physical characteristics, particularly relative viscosities and the freezing point, gave rise to lively discussions and numerous communications. Mr. Southcomb, England, suggested using a simple device for measuring dynamic friction in the unctuous phase, thus enabling unctuosity to be expressed in figures. Mr. Louis, Strasburg, recommended an interesting test method by distillation in cathodic vacuum.

Several communications related to pyrogenations, optical studies and the phenomena of adsorption. Mr. Salomon, Strasburg, rendered an account of his wide research work on the in-vivo alteration of steam turbine oils, following on similar researches in the alteration of transformer oils.

Communications made on the use of oils were divergent in nature and variable in interest. Dr. Batta, of Liège, made an important contribution to the study of wire rope lubrication in mines.

The French Navy Department representative emphasized the difficulty arising from the purchase of oil by tender. This Department is planning to study, in co-operation with competent oil firms, new purchasing conditions to ensure better lubrication of the machines and minimum wear, as well as lowest lubrication expense.

Finally, these discussions led to a few important conclusions:—abandonment of several tests of no real significance, such as that of the freezing point, the Conradson test, the tar test; and of certain points of view such as were formerly published on the degree of refinement.

Retention, for the present only, of most of the other physical tests.

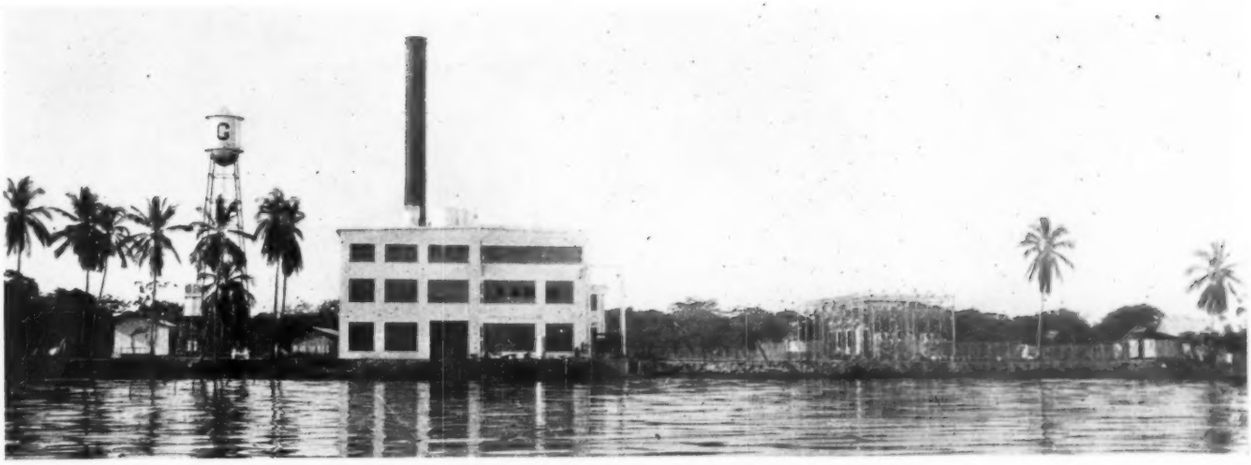
Replacement of all relative viscosity measurements by absolute viscosity tests.

Standardization of analysis methods based on the draft presented by the Chambre Syndicale des Importateurs d'Huiles Minérales. A commission will be formed for the purpose of consulting foreign organizations in an effort to arrive at conclusions which will be effective in all countries, although, of course, revisable.

This tendency towards international co-operation appears again in expressions of desire for a co-ordination of research methods and the organizing of international congresses every three years for example, in different countries in turn.

It was finally admitted that the machine is the last judge of the value of a lubricating oil and that, in consequence, close connection between the mechanic and the laboratory is indispensable.

It seems possible that the Congress may mark a constructive step in the direction of a wider disemination of knowledge on the science of lubrication.



New Las Morochas power plant of the Venezuelan Gulf Oil Company.

Electrifying Gulf's Maracaibo Oil Fields

Starting With Pumping Units the Venezuela Gulf Oil Company Will Gradually Extend Electrical Power to All Its Drilling and Loading Activities.

By K. W. Johansson

WITH the exception of a few wildcat wells, all drilling and pumping in the Venezuelan oilfields until the last few months has been by steam power, and gas engine. Particularly has this been the case along the margin of Lake Maracaibo, where the boilers erected on piles about 300 to 500 ft. from the wells are familiar sights on the skyline, steam pipes being carried along catwalks over comparatively shallow water. In fact it is the shallow nature of this vast inland sea, with its salt water at one end, fresh at the other, and brackish in between, that makes the advantages of electrification even more apparent than they would be if the field was located on dry land. At its deepest point the lake is about 120 ft. deep, and at present, as well as for many years to come, drilling will probably be confined to sections where the depth is less than 50 ft. Only in a few places is the water of greater depth. In the Maracaibo Basin a change in power is just commencing, and before many years electrification of the oil fields will be greatly expanded.

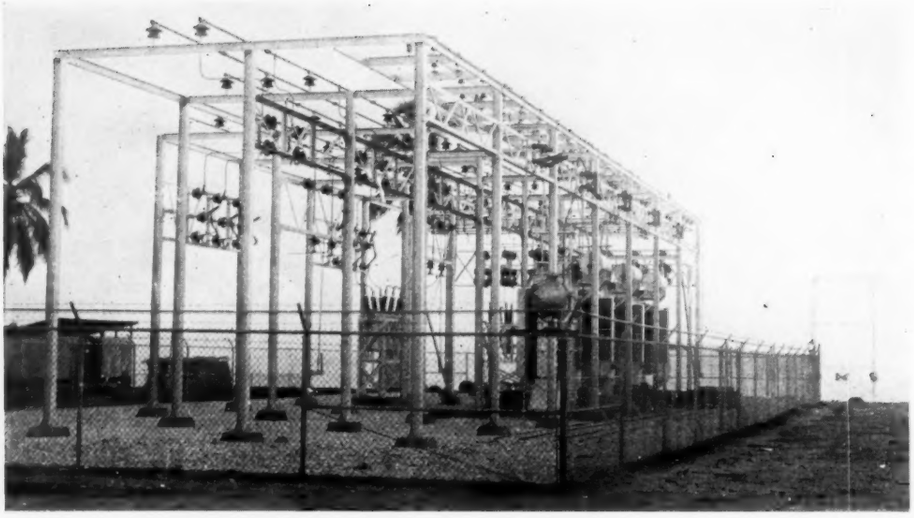
Following two years study, two of the major oil companies operating in Venezuela decided to electrify their properties along the east side of the lake, and thus solve many of the troublesome problems encountered in production with wells located out in the water, and at the same time effect economies in operation. Due, however, to the present extensive curtailments in drilling and production it is probable that the full benefits to be derived from the new power system will not be felt for several years. At the present time the use of electric power will be virtually restricted to pumping wells; but as activity is once more resumed, it probably will be applied to drilling; pumping oil from the flow, or pick-up, tanks on the lake, to the storage tanks on the shore; pumping from storage to the tankships, pumping water, and for lighting and power for the workshops and camps. As the various field boilers now in service become worn they will be discarded and replaced with electrical units.

Step-down substation alongside well at Ambrosio Field.

Transmission line pole, Cabimas.

The Venezuela Gulf Oil Company, and the Lago Petroleum Company simultaneously decided on electrification programs, and a preliminary outline of their plans was given in WORLD PETROLEUM for October, 1930. Both companies proceeded independently, and completed their work almost the same time. This article is confined to the Gulf's operations, and the story of the Lago installation will be given in an early issue.

Plans called for a 15,000 kw. turbo-generator power station, located on the Gulf's property at Las Morochas, and consisting of four units in a steel building. Only two units are installed at present, each consisting of a Westing-



Step-up substation at Las Morochas.

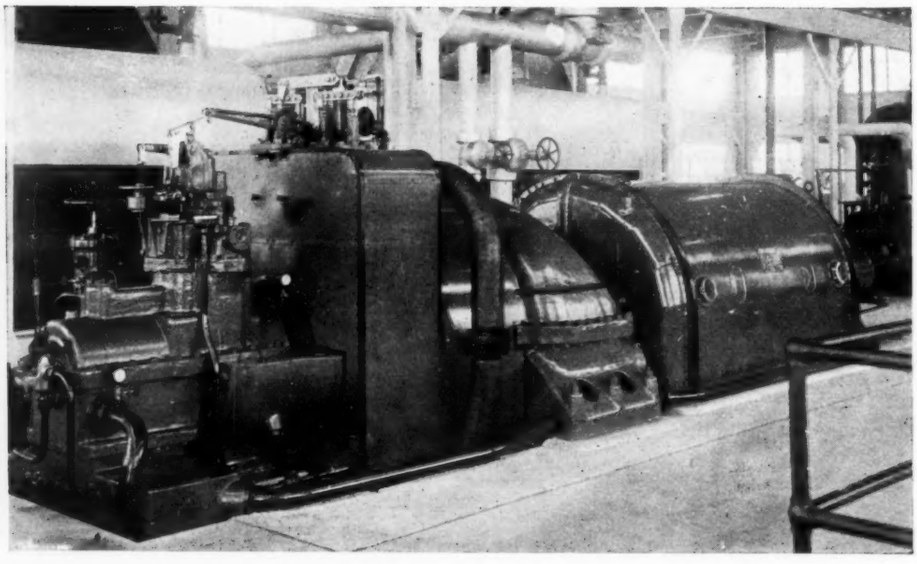
house turbo-generator having a capacity of 2,500 k.w., 2,300 volts, 3-phase, 60-cycles, 3,600 rpm, under an initial steam pressure of 250 lb. per sq. inch. Condensers provide a vacuum of 27 inches at the exhaust. Cooling water for the condensers is drawn from Lake Maracaibo, and suitable intake and discharge tunnels have been provided. Steam at the required pressure is supplied by two water-tube boilers of 1,000 hp. capacity each. The future installations will be similar to the above, except that they will have capacity of 5,000 k.w. each.

Gas supplied from the Lagunillas field is being used normally for fuel although there is provision for auxiliary oil firing in the event of any interruption to the gas supply. The installation includes transformer step-up substation, stepping the voltage from 2,300 to 33,000 volts, water and fuel storage tanks, residences for employes and the usual appurtenances incident to a power plant, and was planned by the Gulf and Westinghouse Electric International Companies' engineers in collaboration. Because of the brackish nature of the water evaporators are used for the boiler feed water, and this is properly filtered for drinking water purposes around the camp. Simplicity of design was the controlling factor in the planning of this station, which otherwise is of conventional type, except that the customary storage battery for relay operation and control of circuit breakers was eliminated and all equipment designed for A. C. operation.

The most interesting part of this development is undoubtedly the transmission line, which is built entirely over water along the lake shore. By locating it in the water it was unnecessary to clear a right of way in the jungle, and the high-tension poles can also be used for the 2,300 volt distribution lines which, of course, saved considerable expense.

Two three-phase circuits, 33,000 volts, go out from the power house transformer station to a distributing tower in the lake 688 ft. from the shore at Las Morochas, from which the present circuit passes towards the North and a future circuit will extend to the South—each branch having a length of approximately 21 miles. The ultimate total length of this transmission line will therefore be about 42 miles, ending in the Rodriguez No. 4 zone, north of Ambrosio on the northern section, and the Lagunita parcel, near Pueblo Viejo, on the southern section.

One of the twin turbo-electric units at Las Morochas power plant.



Commencing at the distribution tower, the transmission line is built over the waters of Lake Maracaibo closely paralleling the shore line. The line is from 200 to 2,300 ft. from the shore, depending upon the shoreline contour and the depth of the lake, due consideration being given to avoiding unnecessary angles in the line. The line is projected to allow a maximum amount of protection to navigation on the lake, as such shipping as can approach the shore in three feet of water will not be hindered by the overhead transmission lines. Truscon-Weltrus steel poles and structures are used for the transmission line, from which the conductor wires are suspended. These structures are of several types to suit local conditions. At angle points special angle structures are provided, and along the tangents specially guyed structures are introduced at frequent intervals to strengthen the line. At all important wharf crossings as well as at the channel crossing at Cano Tasajeras, special high pole structures are located. Altogether there are nine types of structures.

Substations are located on the line; at Ambrosio to serve the area in the vicinity of the Rodriguez No. 4 zone; at the Superior parcel to serve the wells in the Cabimas area, and at Punta Benitez and near the mouth of Rio Tamare on the northern section. On the southern section future substations will be located in Miraflores Parcel, Lago Parcel and Laguna Parcel. At these substations the 33,000 volts is stepped down to 2,300 volts, for local distribution, which is further reduced at the 2,300/440-volt substations for serving the wells.

A uniform spacing of 657 ft. is carried out between poles as far as possible. Steel reinforced aluminum cable having a diameter of 0.447 in. and weighing 184.5 lb. per 1,000 linear ft. is used. A tension of 1,300 lb. per wire, insures that the sag in the center of the span is not greater than eight feet at 125 deg. Fahr. The structures and poles carry three circuits in all, together with one static

wire at the top of the poles. The static wire is grounded at each pole, and is intended as protection against electrostatic disturbance from lightning, which is prevalent here during the rainy season.

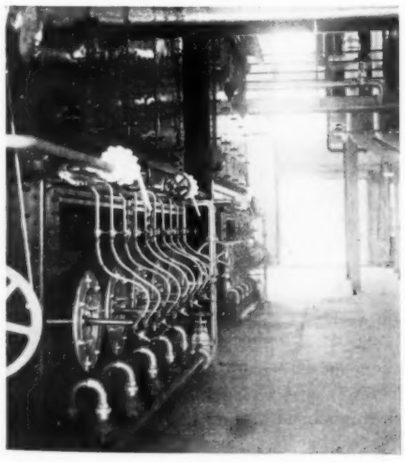
The upper cross arms carry the three 33,000-volt wires, two on one side and one on the opposite side, having a horizontal clearance of 7 ft. 10 in. and the vertical distance between two adjacent wires is 6 ft. 0 in. The 33,000-volt lines are hung from the cross arms on porcelain suspension type insulators, tested to withstand 60,000 volts per insulator per unit.

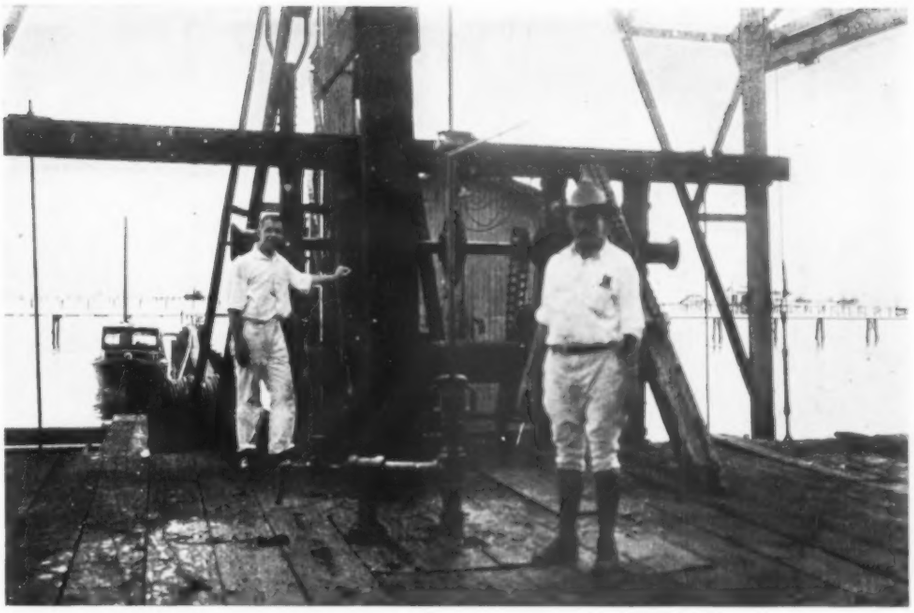
The minimum elevation above water level of the 33,000-volt line is 47 ft. at the center of the span, under the high tension line, and 7 ft. lower on each side of the structures is suspended the 2,300-volt distribution lines, leading from the step-down substation in either direction.

There are two 2,300-volt circuits, one leading to about midway between substations, the other stopping at about one-half the distance from the substation to the midpoint. Branches are tapped off from these 2,300-volt lines, as required, passing through transformers to the 440-volt service lines directly to the wells. The 2,300-volt lines are suspended from their cross arms, 42 ft. high on poles, using one insullating unit for the suspension. The same size and type of wire is used for both 33,000-volt and 2,300-volt lines, with like tension, bringing them at a minimum distance from the water surface of 40 ft.

At the important wharf crossings, poles 87 ft. in height are used instead of the standard 65 ft. pole, and are of the semi-dead and special crossing type.

Combination oil and gas burners on boilers. Upper connections for oil; lower for gas.





Derrick floor; house in background contains reduction gear and pumping motor.

This additional height provides a minimum clearance of 45 ft. at all such crossings.

All steel poles and substations are supported on Westinghouse hollowspun concrete piles, the tops of which are four feet above the water level. The guy anchors, where required are also hollowspun concrete piles, and where more than three guys are required from any anchor, double piling is provided with a concrete cap into which the anchor bolts are secured. Piling was driven by pile drivers mounted on barges, and crane barges were used for erecting the poles. Motorboats are used for inspection.

The substations are built under the transmission line, on concrete platforms, approximately 20 ft. square, supported on hollowspun concrete piling, and the platforms are 8 ft. above the water level. This is to deter anyone from coming into accidental contact with any of the apparatus of the substation. The height of structure of the substations is such as to provide the same clearance for the line as the poles.

There are installed at these substations three 500 k.v.a. single-phase, 33,000/2,300-volt, 60-cycle transformers; and out-door switch house containing one transformer circuit breaker and four feeder circuit breakers with necessary instrument transformers, meters, relays, lightning arresters and disconnecting switches.

From the stepdown substations the 2,300-volt line is run on the lower part of the pole under the high tension line as previously described, and then at convenient points is tapped and run over wood poles to the 2,300/400-volt substations for further distribution to the different wells.

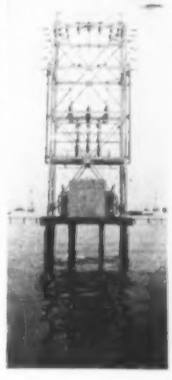
To obtain the best transmission characteristics possible and to minimize telephone interference, the 33,000-volt line was transposed between each substation.

In pumping oil wells it is imperative that any shut down should be for as short a period as possible. Since most of the difficulty experienced in the pumping of oil wells is due to sand, rod or tubing trouble, the equipment that will pull rods and tubing quickly and get the well back to pumping is the most economical to use.

With this in mind, the Venezuela Gulf Oil Company selected the two speed 15/35 hp., 440-volt, 12/6, pole-wound rotor oil-well type motors, with suitable air break gas protected type control. The low speed, low horsepower connections are used for pumping, and the high speed, high horsepower connections are used for pulling rods and tubing. These motors were designed by Westinghouse with a specially high pull-out torque on high speed connections in order to take care of the short time peak loads encountered in hoisting operations. The motors are directly connected to Westinghouse-Nuttall OP-11 double-reduction gear units, which are connected by chain to the draw works for pulling operations, and directly to counter balanced cranks for pumping operations.

In conclusion, it may be stated that as the field men get accustomed to using electricity in performing the different operations required for the production of oil, the use of electricity will be extended to all purposes, including wildcat drilling out in the jungle, where Diesel-electric drilling equipment, which has worked out so successfully in the United States will be adopted.

Step-down sub-station at Ambrosia.



The Foreign Oil Legion

E. W. SINCLAIR, president, Sinclair Consolidated Oil Corporation, returned to the United States from Europe on August 25.

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T. L. JACKS, resident director, Anglo-Persian Oil Company, has resumed his duties at Tehran, Persia, following a visit to England.

▼

H. I. FRY, assistant general manager, Standard Oil Company of Venezuela, is back in Maracaibo after having enjoyed a vacation in the United States.

▼

CARLOS PAIVA, until recently manager of the Parahyba, Brazil, branch of the Shell organization, has been recalled to Rio de Janeiro.

▼

PAT' HENRY, chief geologist, Richmond Petroleum Company, Venezuela, recently returned to his office following a vacation in California.

▼

HERMAN WILLEM KALJEE, formerly with the Richmond Petroleum Company in Venezuela, kindly communicate with the Netherlands Consulate at Maracaibo.

▼

W. W. WINTERS, field engineer, of the Carter Oil Company, Tulsa, Oklahoma, subsidiary of the Jersey Standard, is traveling through Venezuela and Colombia visiting the oil fields.

▼

F. L. BRAYBROOK, well known in Peru as production superintendent for the International Petroleum Company, has returned to his home in Petrolia, Ontario.

▼

B. M. TANNER, assistant chief chemist at the Aruba Refinery of the Pan American Petroleum and Transport Company, has returned to Aruba following a vacation in the United States.

▼

WM. C. DICKERMAN, president of the American Locomotive Company, and of Alco Products, Inc., returned to the United States during the middle of August, following a tour of England, France, Germany and Italy.

▼

A. N. BAYLISS and N. A. Gass, deputy general managers in Persia, Anglo-Persian Oil Company, are in England on vacation.

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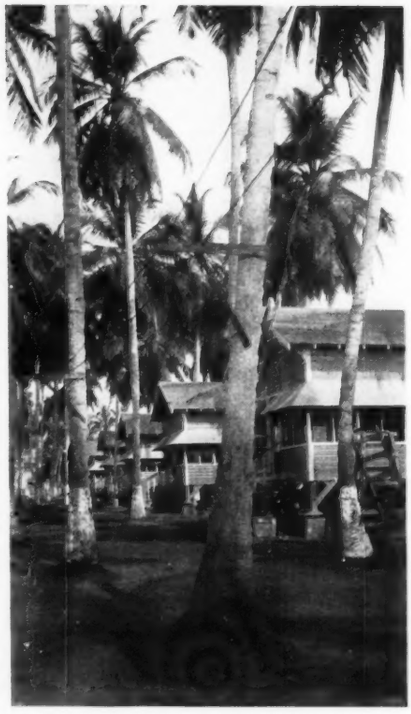
J. W. BURFORD, field manager, Lobitos Oilfields, Ltd., has concluded his vacation in Great Britain and has returned to Peru.

▼

ALEX. M. HAMILTON, foreign sales manager, American Locomotive Company and Alco Products, Inc., has just made a trip from Paris, France, to Roumania and Yugo-Slavia.

▼

C. W. STRATFORD, Stratford Engineering Company, recently spent a few days in Paris in connection with a project to form a company to design and construct oil refineries in collaboration with Alco Products, Inc.



Living quarters at the new Las Morochas power plant of the Venezuelan Gulf Oil Company— *See page 543.*

VICTOR HENNY, European representative, Universal Oil Products Company, is enjoying a vacation at La Baule, France.

▼

CHARLES HAMILTON, Venezuela Gulf Oil Company, assistant to the vice president in New York City, arrived in Caracas on July 23. Hoyt Sherman, acting general agent for the Gulf in Maracaibo, made the trip to Caracas by plane to meet him. Mr. Hamilton has since returned to New York.

▼

F. G. RAPPAPORT, general manager, British Controlled Oilfields, Ltd., Venezuela, returned recently to Maracaibo from his home in England where he had been called following the death of one of his two sons, who was killed in an accident occuring on the cricket field.

▼

WALTER CARRINGTON, head of J. F. Martin Engineering Company in Maracaibo, is on vacation in the United States. J. P. Church of the same company recently returned from Maturin where he completed a contract for the Standard Oil Company of Venezuela.

▼

D. V. DJALALOFF, general manager, Soc. Française de Recherchez au Venezuela, recently left Maracaibo for France on a vacation.

Figure heads in the international petroleum industry: left to right, Sir Robert Waley Cohen, chairman, United Oilfields of Trinidad; Sir John T. Cargill, chairman, Burmah Oil Company, and Sir Henri W. A. Deterding, director-general of the Royal Dutch-Shell organization.

Photo. "Daily Express," London

H. L. Doherty Engages in Newspaper War

Well-Known Oil and Power Man Acts as Contributing-Editor. Purchases Half-Interest in Kansas City Journal-Post in Order to Answer Attacks by Kansas City Star.

HENRY L. DOHERTY, president of Cities Service Company, whose faculty for doing things in startling and unusual ways often has brought him into public notice, has surprised the members of the oil industry by plunging into the publishing business. Mr. Doherty's latest venture was the result of a controversy with the KANSAS CITY STAR, published in Kansas City, Mo., U. S. A., arising from the efforts of that journal to bring about a reduction of gas rates in Kansas cities where public utilities corporations of the Doherty group are operating.

As in most public quarrels there is a lack of agreement among the parties concerned as to the issue involved. The KANSAS CITY STAR, a newspaper very influential in the Middle West and particularly in the State of Kansas, has been asserting that the rates charged for gas in that State by companies in the Cities Service group are too high and should be reduced. Under its prodding, Gov. Woodring of Kansas, acting through the State securities bureau, attempted to bar the sale of Cities Service stock on the ground that the financial statements of the company were not issued in the form required by Kansas law. Mr. Doherty declares that the Governor is being used as a tool by the managers of the newspaper and that the latter seek to ruin Cities Service in order to set up companies of their own or that will be subservient to them.

Asserting that the KANSAS CITY STAR'S attacks upon his companies and himself amounted to persecution Mr. Doherty announced early in August that he had bought a half interest in a competing newspaper, the KANSAS CITY JOURNAL-POST, in order to have a medium through which to meet these attacks. The contract under which the purchase was made is an unusual one. While Mr. Doherty owns half the shares of the JOURNAL-POST publishing company it is provided that only 40 percent of these shares shall have voting power. Control of the publication remains in the hands of the other owners, W. Laurence Dickey and Marion Sharp, who have been connected with the management of the newspaper in the past.

Mr. Doherty's agreement with the other owners provides that he shall hold the position of "contributing editor," and shall be allowed to express his own views without restriction over his own name in the columns of the journal. Its regular editors shall have equal freedom to express their opinions without regard to those of Mr. Doherty. The agreement presents the interesting possibility that diametrically opposing views may be expressed in adjourning columns although it is not considered likely that this will happen. It is provided also in the contract that Mr. Doherty shall be allowed to purchase advertising space in the KANSAS CITY JOURNAL-POST at the same rates as those allowed to its most favored advertisers.

Publication of this agreement has created a sensation in press circles in the United States. While it is not unknown for corporations or individual business men to own journals primarily to advance their own interests or to avoid attack, this practice is unusual and is generally frowned upon. So strong is public feeling upon this subject that when it was revealed in a Congressional investigation in 1930 that partial ownership of a number of newspapers was held by the International Paper and Power Company these publications hastened to free themselves from this connection. In the case of Mr. Doherty and the KANSAS CITY JOURNAL-POST the relationship is perfectly open and aboveboard, the facts having been published as soon as the agreement was made. Newspaper comment on the arrangement, however, is almost uniformly unfavorable. It is held that the position and influence of the publication will be impaired by the connection thus established, and that Mr. Doherty's avowed object of gaining a better outlet for statements that he may wish to make and a fairer hearing for his views will not be realized.

Mr. Doherty's essay into editorial and publishing activities is only part of the vigorous campaign that he has started against the newspaper that aroused his ire. He instituted a libel suit for $12,000,000 against the KANSAS CITY STAR, addressed a telegram to the Postmaster General at Washington demanding that the journal be excluded from the mails, urged the Secretary of Commerce to take action against the STAR and against Gov. Woodring of Kansas whom he accuses of being subservient to it, and applied to the trustees of the Nelson estate to declare that the contract under which the KANSAS CITY STAR was sold by the estate to former employes had been voided by the action of the latter.

H. L. Doherty

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Petroleum Engineering Handbook

THE second edition of this well-known oil engineering handbook is now available for immediate shipment. The editorial content is entirely different from the first edition. Forty authors have contributed as many papers on subjects of vital interest to every engineer in the petroleum industry. Each author was selected for his knowledge of the subject matter, his actual field experience and his standing in the industry. Each paper is specific and deals with actual field and refinery practice, accompanied by the necessary graphs and tables to make the data so given of usable value to the reader.

Approximately one-third of the book is given over to drilling and producing; one-third to refining and one-third to pipe line transportation and storage, a well rounded editorial content with a very high reference value, a book which every engineer in the industry should have available. Copies may be obtained from WORLD PETROLEUM, 153 Waverly Place, New York City, U. S. A., at $5.00.

U. S. Oil Industry Review

	Daily Production bbl.	Daily Runs to Stills bbl.	Gasoline Stocks bbl.	IMPORTS Total bbl.	IMPORTS Gasoline bbl.
Week Ending July 25.....	2,477,261 504,946*	2,514,100	37,359,000	1,338,000	612,000
Week Ending August 1.....	2,490,423 597,551*	2,381,300	36,742,000	846,000	**
Week Ending August 8.....	2,551,807 654,246*	2,439,600	35,881,000	923,000	172,000
Week Ending August 15.....	2,498,500 738,050*	2,492,000	34,534,000	1,913,000	664,000
Week Ending August 22.....	2,608,250	2,458,400	34,068,000	815,000	60,000

Underlined figures indicate improvement in statistical position—decrease in production, runs to stills, gasoline stocks or imports.
* Production of the Rusk-Gregg field, East Texas.
** No gasoline imports for the week ending August 1.

Proration — Martial Law

JUST as WORLD PETROLEUM closed for press last month it was enabled to report that Governor "Alfalfa Bill" Murray of Oklahoma had issued an order shutting down all flush fields of Oklahoma, the same order providing for the enforcement of the shut-down by martial law, the State National Guard being mobilized for service in the oil fields.

Declaration of the martial law was based on a local statute, reading as follows (Section 7,955, Statute 1921): "That the taking of crude oil or petroleum from any oil-bearing sand or sands in the State of Oklahoma at a time when there is not a market demand therefor at the well at a price equivalent to the actual value of such crude oil or petroleum is hereby prohibited."

THE order was preceded on July 28 by an ultimatum to the crude oil purchasing companies that unless such companies posted immediately a price of $1.00 per barrel for the Oklahoma crude, the martial law and the shut-down would be declared. None of the oil companies complied with the ultimatum. Incidentally on August 5, the oil proration laws of Oklahoma upon which Gov. Murray based his executive order for a shut-down were held valid by the U. S. Federal Court at Guthrie, the same court vacating the Champion Refining Company's temporary injunction against the Corporation Commission thus considerably strengthening the Governor's position.

In the meantime the Texas Legislature, sitting in special session, refused to enact any law that would effectively prorate the State's flush fields. Faced with the failure of the legislature to provide any relief to the State's huge oil industry, Governor Ross S. Sterling advised the House and the Senate that unless a conservation law was passed he would be forced to resort to martial law in order to stop the flow of the East Texas field. Whereupon, a few hours before the scheduled adjournment of the special session, a conservation bill was passed by the legislature, and immediately signed by the Governor.

The new Texas oil conservation bill provides: that the railroad commission may prorate production to prevent waste; that an oil-gas ratio may be established; that underground waste caused by the premature intrusion of water into any producing well or wells producing from the same stratum, resulting from improper drilling or producing methods may be prohibited; that natural gas waste in any form may be prohibited; that burden of proof in court cases will be on the complainant; that a penalty of $1,000 per day for violation may be assessed, and that a special tax is to be levied to pay for enforcement of the law.

The bill was signed on August 12, and at first it appeared as though the Governor would rely entirely upon the new law for the curtailment of the Rusk-Gregg field. However, the sky-rocketing production in that field evidently altered the original decision, and on August 17 the Governor signed a proclamation declaring martial law and a complete shut-down of the Rusk-Gregg field.

In his proclamation Governor R. S. Sterling stated that because of open rebellion of certain East Texas operators against the conservation laws and their reckless and criminal handling of the producing wells, the land and royalty owners were preparing to take the law into their own hands, thus necessitating the declaration of martial law. The Texas House of Representatives on August 19 approved in effect Governor Sterling's martial law declaration when it voted down a resolution demanding an explanation of his act.

It is too early yet to pass a definite judgment on the application of martial law and troops to purely economical problems. However, as WORLD PETROLEUM stated in its May issue, it is very evident that no other measure could have possibly achieved in such a prompt way the reduction of the flood of cheap East Texas oil. To that extent the actions of Oklahoma and Texas are considered by many oil men to have been warranted.

The immediate result of the action of Texas and Oklahoma was a drop of about 950,000 bbl. per day in the total production of the United States. Crude oil prices stiffened immediately, though major purchasing companies apparently hesitated to increase prices and thus justify the radical measures of the two Governors. Minor refineries turned their attention to Kansas hoping to secure some cheap production; but such is not available in any appreciable volume, and also the example of Oklahoma and Texas had considerable influence on Kansas officials, who are now considering similar action.

Natural Gasoline Prices

THE shut-down of flush fields in Oklahoma, first by producers' strike, followed by the action of the Governor, reduced the natural gasoline production to but a fraction of the former total. The natural gasoline which a few months ago was a drug on the market at 1 cent per gallon, is now quoted at 5 cents per gallon with but a small quantity being available.

Pipe Lines

THREE major gasoline pipe lines were

completed and put into operation during the last month. The Great Lakes Pipe Line Company from Oklahoma to Chicago, Milwaukee and Minneapolis, with 30,000 bbl. per day capacity, derives its motor fuel from the refineries of the Tulsa district. The Phillips Petroleum Company pipe line serves the refineries of the Texas Panhandle, transporting the gasoline to St. Louis. The Sun Oil Company completed an extension to Syracuse and Binghamton, the gasoline being shipped from the Sun's Philadelphia refinery.

The gasoline pipe lines are thus becoming a major factor in the oil marketing business, and are past the age of an experiment. The railroads will be a major sufferer, because the traffic lost to the pipe lines cannot be substituted by any other product under existing conditions.

Rusk-Gregg — East Texas

FOR the week ending August 12, before the field was closed, the official Rusk-Gregg production averaged 738,035 bbl. per day from a total of 1,578 wells. Seventy-four new locations were made during that week, indicating the continuation of the rapid development. Of the total indicated production the trunk pipe lines moved 446,150 bbl. per day, the railroads 201,942 bbl. per day, while 40,541 bbl. per day went to local refineries and 49,402 bbl. per day to the field's storage.

Greater Seminole—Oklahoma

THE Governor's order affected but about one-half of all wells in the Greater Seminole fields. Of the 2,688 wells with 155,000 bbl. per day allowable under the proration, 1,533 wells continued producing, making 61,538 bbl., or an average of but 40 bbl. per day per well. The wells permitted to produce were either those affected by salt water, or the ones producing under 25 bbl. per day.

Oklahoma City—Oklahoma

THE Oklahoma City field was extended one-half mile to the Southwest by a 20,000 bbl. per day Wilcox Sand well, Phillips and Shell No. 1 Egermeir. This extension always has been considered within the proven area, and consequently it does not enlarge the potentialities of the field.

Under the shut-down ordered by the Governor, the Oklahoma City field production declined to around 1,500 bbl. per day, from the recent high of 250,000 bbl.

Hobbs — New Mexico

SALT water made its first appearance on the southwest side of the Hobbs field. Three wells began showing considerable proportion of salt water, thus indicating that if the field had not been prorated, it would have followed the Hendricks field of Texas, and would have been flooded very rapidly. The Hobbs field potential of over 1,000,000 bbl. per day is accordingly a theoretical figure, because open production there would not have lasted very long above the 200,000 bbl. per day mark.

BASIL B. ZAVOICO.

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French Oil Notes

In spite of overproduction all the world over the S. A. E. M. PECHELBRONN has just obtained from the French Government a further permit to drill for oil and gas at Haguenau (Alsacian, France). The new concession covers 15 km. 95 hectares of land in the districts of Schwindratzteim, Wattenheim, Nommenteim, Weingersteim; etc. . . .

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French statistics for the importation of petroleum products during the first six months of 1931 show an increase of 1,779,690 bbl. as compared with the same period of the previous year.

Total petroleum importations for the month of June amounted to 2,884,775 bbl. as against 1,819,380 bbl. in June, 1930. These importations have cost France Fr. 1,038,507,000 comparing favorably with imports in 1930, for a lesser quantity of products valued at Fr. 1,502,866,000.

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World Oil Production Figures—Official

All figures furnished direct to World Petroleum by Governments, except where otherwise specified

(Conversion 7 bbl. = 1 ton)

	Total 1930 (revised) (barrels)	JANUARY (barrels)	FEBRUARY (barrels)	MARCH (barrels)	APRIL (barrels)	MAY (barrels)	JUNE (barrels)	Total 6 months (barrels)	JULY (barrels)
United States	896,265,000	65,991,000	60,645,000	69,375,000	73,101,000	77,164,000	75,116,000	421,414,000	77,321,000[7]
Venezuela	141,652,832	10,579,707	9,806,034	10,705,814	9,579,784	9,834,545	9,519,825	60,043,709	10,339,028
Russia & Sakhalin	129,955,417	12,072,900	11,141,900	12,654,600	12,318,600	12,796,000	12,989,900	73,973,000	13,931,400
Persia	43,549,323[6]	3,201,156[6]	3,079,132[6]	3,081,260[6]	3,442,341[6]	4,296,642[6]	4,558,950[6]	21,659,481[6]	4,404,106[6]
Roumania	39,876,589	4,233,810	3,570,000	3,856,020	3,850,000	4,195,100	3,990,000	23,694,930	4,046,000[5]
Mexico	39,529,639	2,890,903	2,563,986	2,819,430[2]	2,761,039	3,080,603	2,960,496	17,076,456	3,129,042
Dutch East Indies	38,722,250	3,226,854	3,225,000	3,200,000[5]	3,000,000[5]	3,000,000[5]	3,000,000[6]	18,651,854[5]	3,000,000[4]
Colombia	20,343,176	1,657,694	1,565,423	1,774,865	1,467,429	1,479,452	1,435,185	9,380,050	1,490,524
Peru	12,455,888	986,902	662,022	1,131,155	914,342	762,624	512,900	4,969,945	1,005,712
Trinidad	9,419,804	831,522	744,518	844,534	798,134	788,528	817,761	4,814,998	842,884
Argentina	9,001,671	898,007	796,578	875,400	833,700	1,038,780	1,063,500	5,505,965	1,022,900
India (British)	6,936,315	662,604	635,743	705,568	553,912	563,126	568,980	3,726,915[5]	570,000[5]
Sarawak	5,251,541	326,956[1]	231,090	314,927[2]	309,876	302,295	293,151	1,778,305	288,806
Poland	4,645,550	390,600	350,700	381,500	357,000	372,155	357,500	2,209,455	377,300
Japan & Taiwan	2,250,000[5]	197,500[5]	195,000[5]	195,000[5]	195,000[5]	195,000[5]	195,000[5]	1,172,500[5]	195,000
Egypt	1,977,660	196,021[1]	158,210	162,225	160,573	152,418	149,646	979,093	143,311
Ecuador	1,596,238	137,531	120,145	126,544	117,763	169,111	164,467	835,561	177,085
Canada	1,535,827	179,711	155,651	160,358	153,705	156,392	148,284	954,101	155,000[8]
Germany	1,209,185	127,894	98,000	100,030	77,833	95,438	96,999	596,194	97,930
Iraq	980,000[5]	100,000[5]	100,000[5]	100,000[5]	100,000[5]	100,000[5]	100,000[5]	600,000[5]	100,000[5]
France	516,642	40,075[3]	40,075[3]	40,075[3]	40,000[5]	40,000[5]	40,000[5]	240,225[3]	40,000[5]
Czecho-Slovakia and others	220,000[5]	25,900[5]	25,900[5]	25,900[5]	29,000[5]	29,000[5]	29,000[5]	164,700[5]	29,000[5]
Total	1,407,880,547	108,945,248	99,910,109	112,650,215	114,179,031	120,611,269	118,107,543	674,442,337	122,706,028

[1] 4 weeks to February 6th. [2] Official total, 1st quarter 120,225. [3] 4 weeks to April 17th. [5] Estimates. [6] Anglo-Persian Company's figures. [7] A.P.I. figures. [8] Actual production in Iraq probably higher than official total.

U. S. Soviet Russia Production Review

Progress: 1931

PRODUCTION for the first half of 1931, although representing an increase of approximately 35 percent over the figure for the corresponding period last year, falls short some 30 percent of the current plan at present.

Official Soviet Figures for Operations

	Crude Production (bbl.)	Runs to Stills (bbl.)	Drilling (ft.)
Jan. 1 to June 31	73,973,900	64,949,500	1,018,540
July	13,931,400	12,248,600	228,706
Total	87,905,300	77,198,100	1,247,246

IT is obvious and generally admitted that the tempo of the Plan's progress has slowed down since the beginning of the year. More important than the slowing down of the rate of increase in production, runs to stills, and gasoline and kerosene output, is the falling off in the efficiency of labor and the drilling speed per rig per month, which is given as 88 and 68 percent of the Plan, respectively. Cost of production exceeds the estimate by 10.4 percent, and drilling cost fails to meet the optimistic forecast of the plan by 35 percent.

All these shortcomings are largely due to disorganization and lack of transportation facilities. In reference to transportation the size of the handicap may be seen from the fact that requirements for the petroleum industry in motor transportation were estimated at 275 cars and 700 trucks for 1931: the Supreme Economic Council approved only 170 trucks. Of these only 13 have been delivered in the first half of this year.

Delay in bringing approximately 130 new wells into production may be attributed to lack of lumber, cement, and casinghead and drilling pipe; while the number of wells shut down due to lack of compressor equipment, although not accurately known, is understood to be large.

Refinery Construction

DIFFICULTIES in bringing new refineries into operation are assuming alarming proportions, and are mostly attributed to mismanagement, inefficiency, and inadequate planning. Domestic equipment manufacturing plants, hastily put into commission with a view to reducing importation of refinery equipment, are invariably late in deliveries and fail to correlate their activities with those of the oil industry. Many of the refineries completed within the past six months are idle at present due to the lack of a few important parts.

In addition to the complete list of refineries published in WORLD PETROLEUM for July, it is now possible to give a resumé of refineries actually completed in the first half of this year. Some of the plants in the accompanying list are under steam at present, but the greater number are still waiting to be put in operation.

Refineries Completed During First Half 1931

	Annual Capacity (bbl.)	Cost † (Rbls.)
BAKU		
2 Graver pipestills (domestic manufacture)	4,600,000	1,500,000
2 Winkler-Koch cracking units	2,100,000	3,500,000
2 Pipe stills, second distillation	1,800,000	2,000,000
1 Max Miller bright stock plant	280,000	5,500,000
1 Foster Wheeler pipe still	4,600,000	5,380,000
BATOUM		
3 Foster Wheeler pipe stills	8,800,000	35,000,000
GROZNI		
4 Badger pipe stills	4,600,000	2,000,000
4 Winkler-Koch cracking units	4,200,000	7,500,000
1 Reconstructed wax plant	16,500*	1,800,000
JAROSLAVI		
1 Winkler-Koch cracking unit	560,000	1,800,000

* tons. † One ruble = 50 cents

Future construction at Baku and Grozni will be confined to enlarging existing plants in an attempt to increase the output of lube oils, asphalt and other important by-products. New refineries, however, are planned for important points of consumption and the accompanying table, replacing that given on page 436 of the July issue, gives the points and capacities planned.

Locations for Future Refinery Construction

Location	Annual Capacity (bbl.)
Moscow	16,000,000
Armavir	45,000,000
Liski (Voronesh)	12,000,000
Samara	9,000,000
Stalingrad	6,000,000
Uzbekstan	10,500,000
Chabarovsk	6,000,000
Valadivostock	6,000,000
Aktiubinsk	9,000,000
Ural	3,000,000
Georgia	6,000,000
Total	128,500,000

Serious difficulties are anticipated in the construction and operation of these new refineries, arising particularly from inadequate supplies of material and labor.

Pipe Line Policy

THE principal change in the construction of pipe lines in the immediate future consists of concentrating on lines from the fields to refineries at consumption points instead of lines from refineries to seaports for export. First plans under the new policy call for the completion of the line from Armavir to Nikitovka, designed to carry tractor fuel to the fertile agricultural area of the Ukraine.

Building plans for 1932 call for the completion of the Maikop-Armavir line, which will be joined to the Grozni-Dnepropetrovsk pipe line leading eventually to the connecting of the Grozni-Armavir line with the line at present under construction from Nikitovka to Dnepropetrovsk. The Armavir-Liski pipe line will be completed during 1932. In the following year, this line will probably be extended to Moscow taking the place of the crude line to Moscow, plans for which have been cancelled as announced in these pages several months ago. By the end of 1933 it is planned to complete the Emba-Aktiubinsk line and enlarge the present Grozni-Armavir line, giving it a capacity of 70,000,000 bbl. of Maikop crude to be refined at Armavir.

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Big Land Diesel Engines

THERE are indications that the big power interests of the United States will turn to Diesel engines, and in high powers, far more extensively than they have done in the past. Action is likely to be expedited by the order recently placed with the General Machinery Corporation (Delaware) of Hamilton, Ohio, by the city of Vernon, California, for five Hamilton-M.A.N. oil engines of 7,000 b.hp. This Diesel power station will be among the largest in the world, exceeded only by that in Shankhai, China.

FINANCE

Paris: August

EXTREME nervousness has characterized the tendencies of the Paris Bourse during the past month. It has reacted like a sensitive plant to every bit of information, good or bad, concerning the Anglo-German financial negotiations, and the volume of business concluded has been negligible.

On August 4, the time limit expired for the different companies, who have obtained licences to import crude oil, to signify their acceptance or refusal of the conditions imposed by the decrees of April 4. These conditions were unanimously accepted before the expiration of the time limit, and there is no doubt that capital will be solicited for the construction of the refineries in question; the Compagnie Française des Petroles alone will probably require several hundred million francs, which it may be difficult to find at present.

No dividend is to be distributed this year by the Cie. Standard Franco Américaine, which announces a net profit of Fr. 11,975,075. This sum includes, however, the balance of Fr. 7,604,622 carried forward last year; profits for 1930 therefore, in reality, only amount to Fr. 4,370,453.

Last year's balance of Fr. 7,604,622 also figures on the company's debit account together with Fr. 3,948,273.45 written off for amortization and Fr. 3,833.20 for general expenses. This leaves a surplus of Fr. 418,297 which, with the unanimous consent of the shareholders, is to be carried forward.

In their report the board of directors drew the attention of the shareholders to the fact that the dividends received by the Standard Franco Américaine from her subsidiary companies had greatly diminished during the last twelve months, and that whereas in June, 1930 Fr. 250 was obtained for an hectoliter of gasoline, in August of the same year the price had fallen to Fr. 237, and in June, 1931 to Fr. 150. No allusion was made to the existing prices of petroleum products in the United States in this conjunction.

Price slashing, particularly of Russian and Roumanian oils, on the European market caused considerable inventory loses during the second half of 1930 to the company. Even if the decline in prices could have been forseen it could not have been adequately met, as the French law requires oil companies to carry three months reserves in stock.

A SECOND extraordinary meeting of the S. A. Pechelbronn's shareholders was held on July 29. Mr. Herrenschmidt, who presided at the meeting, said that to obtain satisfactory results in the refining business, a minimum of 2,450,000 bbl. of crude oil was necessary. Pechelbronn's licenses only cover 1,260,000 bbl. of products. Therefore, they deemed it advisable to obtain a controlling interest in the "S. A. Brest Port Pétrolier," which has a capital of Fr. 2,800,000 and an importing license of 1,575,000 bbl. This will enable Pechelbronn to dispose of a total of roughly 2,625,000 bbl.

In order to conclude this arrangement, Pechelbronn's shareholders were asked, and agreed, to authorize a maximum increase in capital of Fr. 119,000,000 bringing the total up to Fr. 200,000,000, and also to consent to the issue of new obligations to the extent of Fr. 100,000,000, which could be subscribed as and when the board of directors thought necessary.

FINANCIAL results obtained by the Société Française Lemoine for 1930 are deplorable. The balance sheet shows a deficit of Fr. 5,902,313 and the shareholders refused to approve the accounts submitted to them by the board of directors, with the result that all the members of the board were obliged to resign "en block." A new board was elected who will, it is stated, probably reduce the company's capital from Fr. 47,000,000 to Fr. 10,000,000.

THE Soviet organization for the distribution of the Soyousneft's petroleum products in France, Belgium, Holland, Spain Portugal, etc.—known as the "S. A. des Produits du Naphte Russe," announces a net profit of Fr. 2,484,075 for 1930. The company is distributing a dividend of 5 percent to shareholders, and is making more than an ample reserve for depreciation by transferring Fr. 2,109,871 to the reserve fund after having already put aside Fr. 124,203 against legal reserves. The S. A. des Produits du Naphte Russe has a working capital of Fr. 5,000,000, and is interested in the Société Petronaphte, which in its turn is a subsidiary of the S. A. Petrofina.

E. J. ANDRE.

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New York: August

RECENT developments in the Mid-Continent have tended to strengthen the

Paris Bourse Prices

1931 Div.	1931 Par	Share	July 15 to August 12 First	High	Low	Last	Change
30 Lei	500 Lei	Astra Romana	82	95	82	92	+10
.....	500 Lei	Colombia	71	79	69	69	— 2
50 Lei	500 Lei	Concordia	55	76	52	53	— 2
.....	500 Fr.	Cdre. Gén. des Pétroles act.	..	..	..	..	....
.....	500 Fr.	Cdre. Gén. des Pétroles part.	..	1050	910	910	....
.....	500 Fr.	Franco Pol. Pétroles act.	55	61	55	58	+ 3
.....	.....	Franco Pol. Pétroles part.	..	..	..	..	....
1 $	10 $	Franco Wyoming	270	325	217	239	—31
20 Fr.	500 Fr.	S.G.desHuilesdePétrolesact.	280	302	280	297	+17
.....	.....	" " part.	95	100	92	92	— 3
.....	500 Fr.	C. Française des Pétroles	..	..	..	..	....
.....	500 Fr.	C. Industrielle des Pétroles.	..	800	765	800	....
70 Fr.	500 Fr.	LilleBonnieresColombesprio.	765	825	762	805	+40
45 Fr.	500 Fr.	" " ord.	500	517	496	515	+15
.....	500 Fr.	Malopolska act.	23	34	23	27	+ 4
.....	.....	Malopolska part.	166	183	140	140	—26
.....	.....	Mexican Eagle	43	50	43	50	+ 7
.....	250 Fr.	Omnium Inter. des Pétroles.	98	110	98	105	+ 7
50 Fr.	500 Fr.	Pechelbronn	..	647	601	..	....
60 Fr.	500 Fr.	Petrofina	446	505	446	460	+14
240 Fl.	1000 Fl.	Royal Dutch	20700	22600	20000	20100	—600
24 Fl.	100 Fl.	Royal Dutch 1/10	2075	2300	2015	2045	—30
.....	1 £	Shell	316	337	280	280	—36
25 Fr.	500 Fr.	Steaua Française	183	211	183	211	+28

feeling in the financial world that the demoralization in the oil industry occasioned by overproduction of crude has seen its worst phases.

It would perhaps be premature to predict substantial improvement before the end of the year, and it is quite probable that the present display of strength in the oil shares will be followed by weakness later on when it is realised that the difficulties besetting the industry are too deep and far reaching to admit of any over-night solution and recovery. However, unless unforeseen obstacles arise, such as a substantial decline in gasoline consumption, it appears that the underlying positions of both gasoline and crude divisions are shaping toward stabilization and laying the groundwork for real recovery in 1932.

THE merger season in the oil industry seems to be getting well under way. In addition to the Socony-Vacuum deal and the imminent Sinclair grouping, comes official announcement from California that representatives of Standard Oil Company (New Jersey) and Standard Oil Company of California have resumed discussions, tentatively initiated more than two years ago, and have decided that a merger is desirable. W. C. Teagle and K. R. Kingsbury, presidents of the respective companies, and certain of their associates, are conferring on the West Coast.

Although this merger would not result in a unit operating in all sections of the United States, it would bring under one management about one-fifth of the total invested assets of the industry in this country. Combined assets of about $2,400,000,000 would rank it on a par with U. S. Steel Corporation, both companies being exceeded only by American Telephone and Telegraph, whose assets amount to more than $3,000,000,000. Territories in which the two companies operate do not overlap, and it is believed that no active opposition from the Government will arise.

ALTHOUGH reduction in Standard of Indiana's dividend rate from $2.00 to a $1.00 basis was accompanied by official expression of hope that the lower rate would be only a temporary necessity, this decline in their personal income will not be welcomed by stockholders and will be taken as an indication of a poor 1931 report to come. However, some encouragement can be drawn from the remarks of President Seubert in announcing the reduction: "Our action is not occasioned by pessimism regarding the outlook. Although it is still difficult to see what lies ahead for business in general, we have confidence in the future. The prospect for betterment in the oil industry is stronger at present than it has been for many months. Standard of Indiana's own business is showing developments which must be regarded as encouraging. The trend as to volume of sales is better than it has been for some time, thought with lower prices."

FOLLOWING report of half year net loss of $20,959,506 after interest and reserve charges, directors of Shell Union deemed it advisable to omit the quarterly dividend of $1.37½ due at this time on the 5½ percent preferred. Continuance of payments during the first six months completely eliminated surplus account leaving a deficit for this item as of June 30 of $3,238,000. Management did not feel warranted in increasing this deficit, even though large reserves have been built up through ultra-conservative accounting policy and could be drawn upon if desired to replenish surplus account. For the first half of this year charges to reserves totaled $22,710,368, or more than the reported net loss.

SECOND quarter earnings of Standard Oil of California equal to 10 cents per share of capital stock were about in line with expectations and brought net for the half year to $5,643,968, compared with $19,718,525 earned in the first half of 1930.

IT has been learned that after two years of intermittent negotiations, agreement on all but a few minor points has been reached among important groups of stockholders of each company for merger of Sinclair Consolidated, Tide Water Associated, Prairie Oil and Gas, Prairie Pipe Line and Rio Grande Oil. Under the plan a new holding company, probably to be called either Associated Petroleum or Commonwealth Petroleum, would be organized and would exchange its shares for those of the various component companies. It was said that Sinclair and Prairie Oil and Gas would receive share for share, while Tide Water Associated would receive eight new shares for each ten deposited, and Prairie Pipe Line fourteen for ten.

Publication of this information was immediately followed by a detailed statement by President Byles of Tide Water Associated, who said that insofar as his company was concerned no official decision had been reached as to whether such a merger was economically justified or as to what ratio of exchange would be considered equitable. He characterized the report of an agreement being reached as premature.

New York Stock Prices

1931 High	1931 Low	Current Div. $ per Annum	Stock (Par Value)	July 27 to August 15 Sales (Shares)	First	High	Low	Last	Net Change[1]
23⅝	11¼	1.00	Atlantic Refining (25)....	22,800	15¼	16⅞	14¼	16⅞	+1⅞
14½	5¾	....	Barnsdall "A" (25).....	30,200	8⅝	8⅝	7	8¼	— ⅛
3⅛	¾	....	Colon Oil (No).....	2,300	1¼	1½	1¼	1½	.....
12	5	....	Continental Oil (No).....	47,400	8¾	9⅝	8	9⅛	+ ⅛
3⅞	2	....	Creole Petroleum (No)....	6,100	2⅝	2⅝	2⅛	2⅜	— ¼
75½	38	1.50	Gulf Oil Corp. (25).....	6,500	54	63	53½	62½	+8½
72	49⅞	2.00	Humble Oil & Ref. (25)...	2,600	61½	65	58	65	+3
18¼	9⅞	0.50	Imperial Oil, Ltd. (No)...	13,900	12	13⅞	11⅞	13½	+1⅝
4⅝	2	....	Indian Refining (10).....	1,700	2¼	2¼	2¼	2¼	+ ⅛
15½	8¾	1.00	International Petr. (No)..	18,100	11⅞	13⅝	11¾	13¾	+1⅛
19½	7	....	Ohio Oil (No).....	18,100	10	10⅞	9¼	10¾	+ ⅞
36½	24	*0.40	Pan Amer. P. & T. 'B' (50)	300	26	29	26	29	+ ⅛
16⅝	4¾	....	Phillips Petr. (No).....	77,600	8¼	9¼	7	9	+ ¾
20⅜	6½	....	Prairie Oil & Gas (25).....	4,200	10¼	11¼	9½	11¼	+1
11⅞	5½	....	Pure Oil (25).....	15,300	8	8⅜	7⅛	8⅜	+ ⅜
6⅜	1	....	Richfield Oil (No).....	5,300	1⅜	1⅞	1⅜	1⅝	+ ⅜
42⅝	24⅞	†2.27	Royal Dutch N. Y. (13⅓)	8,900	26¾	27¾	25½	27⅝	+ ⅝
20¾	10⅝	....	Seaboard Oil (No).....	59,200	14½	15½	13⅜	15½	+ ⅛
10¾	4½	....	Shell Union (No).....	28,400	6¼	6½	5	6½	+ ⅝
15⅞	6¼	....	Sinclair Consol. (No).....	105,300	10¼	11¼	9½	11⅛	+ ⅞
12⅞	3⅛	....	Skelly Oil (25).....	5,500	5	7¾	4⅛	7⅜	+2⅛
51¾	31½	2.50	Standard Oil of Calif. (No)	45,000	36¼	39⅝	35⅝	39	+2⅝
38½	19½	1.00	Standard Oil, Ind. (25)...	81,500	24⅝	27	22⅝	26½	+2½
23⅝	15⅝	1.60	Standard Oil, Ky. (10)....	8,400	18⅝	19⅞	18½	19⅝	+ ⅜
52½	30⅝	§2.00	Standard Oil, N. J. (25)...	116,100	36⅝	40½	36⅝	40½	+3⅝
26	13⅞	1.60	Standard Oil of N. Y. (25)	92,000	17⅝	19⅝	17¾	19½	+2
45¼	31	#1.00	Sun Oil (No).....	2,800	37¼	38	36⅞	38	—4
36¼	18	2.00	Texas Corp. (25).....	40,400	23	25	22½	24⅞	+1⅞
9	4	....	Tide Water Assoc. (No)...	38,500	5½	7¾	5¾	7¼	+1¾
26⅝	14	*2.00	Union Oil of Calif. (25)...	13,300	16½	17	14¾	17	+ ¼
69¾	22½	2.00	Vacuum Oil (25).....	32,200	43¼	48⅝	43½	48½	+5¼
1⅞	⅝	....	Venezuelan Petr. (5).....	1,400	¾	⅞	¾	⅞	.....

[1] Since close of last month's table. * Initial dividend, paid July 20, 1931. † Paid for 1930—no regular rate. ‡ Also paid 2 percent in stock at close of 1930. § Including extras. # Also paid 9 percent in stock at close of 1930. ★ Plus 4 percent in stock.

TIDE WATER ASSOCIATED reported for the six months ended June 30 consolidated net loss of $1,077,464, after interest, reserve charges and inventory adjustments. In the same period of 1930 net income was $5,595,635, equal after prefered dividends to 58 cents per share of common. The West Coast subsidiary, Associated Oil, showed a net profit of $1,111,308 for the first half of 1931, while Tide Water Oil, operating on the East Coast and to some extent in the Mid-Continent, suffered a net loss of $2,008,571. Working capital is reported to be more than equal to the current market price of the common stock, and liquid funds alone are approximately equal to total current liabilities.

BARNSDALL CORPORATION, a medium sized independent unit operating in the Mid-Continent, reported half year net loss of $1,815,498, agaist profit in the same 1930 period of $3,367,440, and after dividends showed a deficit to surplus of $2,914,009. Despite the largest volume of business in its history, the company suffered heavy loss because of extremely low levels of oil prices. Due to these conditions directors decided to omit the 25 cent quarterly dividend on the common stocks which would have been due about the middle of August.

FOLLOWING practically unanimous approval of the merger by stockholders (see last month's financial notes), shares of Standard Oil of New York and of Vacuum are being exchanged for shares of the new Socony-Vacuum Corporation and the latter stock has been listed on the New York Stock Exchange. The new company has declared a 40-cent dividend payable September 15, which if paid quarterly will be a continuance of the former $1.50 rate of Standard of New York, and equivalent to restoration of the former $4.00 rate of Vacuum which had recently been reduced to $2.00.

C. C. BAILEY.

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London: August

MOST of the oil news coming to hand during the past month has been unfavourable from the stock market standpoint. No domestic development of importance has taken place since the reduction of 1d. per gallon in the British price of petrol towards the end of July, and any interest in the market has been derived principally from the United States. Nothing has yet occurred to convince operators that these efforts to control output in East Texas will be permanently successful, and the general belief expressed in London is that the public will keep out of oil shares until an improved American position is definitely reflected in statistics. The technical position is sound enough, but business is so small that prices are sensitive.

ANNUAL reports and meetings of the leading British companies having been disposed of, operators are devoting attention to the cabled results of American concerns. The reports are considered no worse than might have been expected, but the Shell Union results for the June quarter were a mildly depressing influence on the shares of Shell Transport and Royal Dutch, which own between them over 60 percent of the Shell Union capital. Full advantage of the company's depreciation and depletion allowances on a generous scale should accrue to the controlling group as soon as conditions in the petroleum industry take a turn for the better.

BY passing the dividend for the third year in succession, the directors of United Oilfields of Trinidad have called down the wrath of some of their shareholders. The company reported a gross profit of £106,257 for 1930, but heavy depreciation allowances converted this into a net loss of £35,616. Sir Robert Waley Cohen, the chairman, explained at the annual meeting that there was no alternative to writing off the bulk of the cost of drilling. He added that the directors would soon be able to determine whether the present high cost of drilling was warranted. If the wells now producing maintaind their output fairly well, the company would be justified in continuing its present policy. A rapid decline in output, however, would prove that the field could not be made to pay in periods of low prices, and the whole situation of the company would have to be reconsidered.

DECREASED production from the properties of Trinidad Central Oilfields combined with lower prices to increase the company's operating loss for 1930. Output declined by 14,782 bbl. to 129,304 bbl. After provision for depreciation, there was a loss of £15,854 on the year's operations, against a deficit of £3,715 in 1929. There is now a debit balance of £45,896 at profit and loss, and the balance sheet shows a surplus of liquid assets of only £21,760. The company is one of the big post-war disappointments of the market. It was formed in 1917, has a capital of £1,350,000, and paid two dividends of 10 percent per annum in its early career. No return however, has, been made since 1920.

REPORTS are current that the Royal Dutch—Shell and Standard of New Jersey organizations are working together in the Roumanian oil fields, and petroleum products market in a serious attempt to stabilize conditions; but this report has little market significance.

ALEC. H. DAY.

THE Federal Oil Conservation Board has published recently a compilation of the oil and gas conservation laws of the principal producing States of the United States.

London Stock Exchange Prices

1931 High	1931 Low	Last Year's Div. % per Ann.	Share	July 15 to August 15 First	High	Low	Last	Change
9/16	1/4	3 1/2	Anglo-Ecuadorian	3/8	3/8	9/32	6/16	— 1/16
2 3/4	1 1/16	17 1/2	Anglo-Egyptian "B"	1 7/16	1 3/4	1 5/16	1 5/16	— 1/4
2 13/32	1 13/32	15	Anglo-Persian	2 1/4	2 1/4	1 29/32†	1 15/16†	— 1/4
5/8	9/32	15	Apex Trinidad (5s.)	13/32	13/32	6/16†	11/32†	— 1/16
31/32	1/2	....	Attock	3/4	3/4	11/32	3/4	.....
5/16	5/16	* 5	Brit. Borneo (6s.)	1/4	1/4	2/16	2/16	— 1/16
7/32	3/16	6 1/4	Brit. Burmah (8s.)	2/16	2/16	2/16	2/16	.....
5/32	1/16	....	Brit. Controlled (85)	1/16	2/16	1/16	1/16	.....
1/4	1/16	....	Brit. Controlled Pfd. (85)	1/8	1/8	2/32	2/32	— 1/32
3 5/8	2 1/16	22 1/2	Burmah	2 15/32	2 1/2	2 1/16	2 2/32	— 5/8
15/32	5/16	12c.	Canadian Eagle (No par)	11/32	11/32	5/16	5/16	— 1/32
11/16	3/8	....	Creole (No par)	1/2	17/32	7/16	7/16	— 1/16
5/32	1/16	....	Kern River (10s.)	3/16	3/16	2/32	2/32	— 1/32
1 1/2	23/32	10	Lobitos	1 2/32	1 1/2	1 0/16	27/32	— 1/4
17/32	5/16	6	Mexican Eagle (84 Mex.)	11/32	3/8	11/32	11/32	.....
36 1/2	24 3/4	40c.	Pan American "B" (850)	25	26	24 3/4	26	+1
3/8	3/16	2 1/2	Phoenix	1/4	1/4	3/16	3/16	— 1/16
26 1/16	15 7/8	17	Royal Dutch (fl. 100)	17 1/4	18 3/4	16 1/2	16 1/4	—1
3 27/32	2 1/4	*17 1/2	Shell Transport	2 1/2	2 19/32	2 5/32	2 5/16	— 3/16
9/32	5/32	4	Steaua Romana	1/4	9/32	7/32†	7/32†	— 1/32
1 15/32	1/2	7 1/2	Trinidad Leasehold	1 13/16	1 1/4	15/16	15/16	— 1/4
9/32	5/32	....	Utd. Brit. of Trinidad (6s. 8d.)	3/16	3/16	3/16	3/16	— 1/32
1 25/32	1 1/4	17 1/2	Venezuelan Oil Concessions	1 3/4	1 13/32	1 1/4	1 5/32	— 7/32

Nominal value of shares £1 unless otherwise indicated by bracketed figures.
* Denotes Tax-free dividend. † Denotes "ex-dividend" price.
c. Denotes cents per share.

SHIPPING

London: September

A STUDY of Lloyd's Register of Shipping returns for the six months ending July 31 reveals that there is still considerable tanker construction activity; but that such activity is beginning to cool off and there is little to take its place. The firm of John I. Jacobs has concurrently almost with the Lloyd's Register figures, issued its tanker chartering review for the first half of this year, and what Lloyd's Register shows in statistics, Messrs. Jacobs say in words. They state, for example, that tankers under construction at the end of March, 1931 number 95 vessels of 761,000 tons gross; the figures for the end of June have dropped to 77 ships with a total of 627,810 tons gross.

At the end of June a year ago there were no less than 148 tankers under construction in world shipyards with a total of 1,110,058 tons gross. Of these 148 only 17 were steamers, the total motor tanker tonnage being 975,308. The motorship total at March was 663,000 gross tons while at the end of June it had dropped to 526,699. This does not indicate any changeover in the choice of owners from Diesel to steam; on the contrary the percentage of motorship superiority is well maintained; but is maintained on a considerably falling world total.

Future Construction

NUMBERS of the vessels at present laid up, it is considered by tanker men, will never be used again, particularly the very old steamers which have been working, in the dirty oil trades. Naval architects consider too that the tanker of the future may bear no sensible relation in many respects to the tanker of the past. The Anglo-Saxon Petroleum Company is undoubtedly leading the way with its 13½ knotters towards a faster type of bulk oil carrier. The speed that they have now standardized, 13 to 13½ knots loaded, seems likely to meet the requirements of oil carrying for a number of years. The Japanese in two specific cases have gone to an even higher speed and have built two vessels to which attention has been called in these columns. It is likely that these ships have been designed from an Admiralty point of view, and may be required to accompany the fleet at sea. While it would be unwise to dogmatise, it does not seem likely that tanker owners in general will want to go to such high speed, unless a tremendous difference takes place in the freight situation and unless the demand for carrying is considerably increased and will result in such ships being able to make extra voyages per year, thereby justifying their speed. It is the cheapness with which speed can be bought with Diesel engines, which has led Japanese owners to go to higher speed than customary, and it would have been possible to do this only with oil engines.

Charter Market

IT is not possible to report any great influx of activity in the charter market nor indeed would this be reasonable to expect. Towards the end of the period under review, however, there has been what is described as "slightly more movement" in the clean and dark oil cargo market, although freight rates are still extremely poor. In clean oils there has been some enquiry for tonnage from the Gulf and Black Sea to Europe, a 9,500 tonner having been chartered from California to Australia 18/- August loading. Enquiry also has been made for a 9,000 tonner from Russian Black Sea ports to Durban.

A large vessel has been taken for the carriage of 10,000 tons crude oil from California to Japan at 45 cents, while a large ship was fixed from Constanza to Ceuta at 5/- and from Aruba to Teneriffe, an American tanker of 11,000 tons accepted 6/6d. for two August voyages.

A. C. HARDY.

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The X Y Z of Communism, by Ethan T. Colton (The MacMillan Company, New York, publisher, $3.50) is one of the most authoritative books recently published on the Russian Soviet situation. The book is an interpretation of the Russian Communistic Bible, *The A B C of Communism*. The interpratation covers all phases of Soviet life, more particularly its industrial aspects, and is of considerable interest to students of the petroleum industry.

Tankers Recently Launched and Completed

Name	Owner	Builder	Type of Engine	Tonnage	Power	Speed Knots	Remarks
CORBIS	Royal Dutch Shell Group	Workman Clark and Co. Belfast, Ireland	North Eastern-Werkspoor Twin-screw Diesel	11,500 Dw.	4000 B.	13½	Launched July 16
CAPSA	Royal Dutch Shell Group	R. and W. Hawthorn Leslie and Co., Ltd., Hebburn, England	Hawthorn-Werkspoor Twin-screw Diesel	11,500 Dw.	4000 B.	13½	Launched July 17
MACUBA	Royal Dutch Shell Group	P. Smit Junr. Rotterdam, Holland	Werkspoor Twin-screw Diesel	11,500 Dw.	4000 B.	13½	Trial trip June 30
CAPRELLA	Royal Dutch Shell Group	R. and W. Hawthorn Leslie and Co., Ltd., Hebburn ,England	Hawthorn-Werkspoor Twin-screw Diesel	11,500 Dw.	4000 B.	13½	Trial trip July 7
GRECOCRUZ	Shell-Mex Ltd.	Lobnitz and Co., Ltd. Renfrew, Scotland		334 G.			Launched July 7
LISE	Consul General Ivar Christensen, Oslo	Wm. Doxford and Sons Ltd. Sunderland, England	Doxford O. P. Diesel engine	9,700 Dw.	3000 I.	11½	Trial trip July 14
BRALANTA	Norwegian owners	Gotaverken, Gothenburg, Sweden Hull sub-contracted to Caledon Sb. Co., Ltd.	Gotaverken-B. and W.	11,400 Dw.		12	Trial trip July 4
TEIYO MARU	Nippon Tanker Kaisha Ltd.	Yokohoma Dock Co., Ltd. Yokohoma, Japan	Yokohoma-M. A. N. Twin-screw Diesel	12,320 Dw.	7200 B.	14½	Made about 17 knots on trials.
NOREG	H. M. Wrangell and Company.	Burmeister and Wain Copenhagen, Denmark	B. and W. Twin-screw Diesel	11,150 Dw.	2000 I.		Completed
O. B. SORENSEN	S. H. Smith Sorensen Arendal	Kockums Mek-Verk. Malmo, Sweden	Kockums M. A. N. Twin Diesel	11,500 Dw.	2300 I.		Launched

London Market Report

THE mineral oil market continues weak and shows no indication of any immediate improvement. On July 18 a reduction of 1d per gallon was made in the price of motor spirit, and the price of gas oil was reduced by ¼d per gallon on July 13. No other changes have taken place.

MOTOR SPIRIT: Wholesale prices, delivered in bulk, are as follows:

	Aviation	No. 1	No. 3
England and Wales and South Scotland	1/5½	1/1½	11½
Belfast Zone	1/6	1/2	1/-
Rest of Northern Ireland	1/6½	1/2½	1/- ½
North Scotland	1/6½	1/2½	1/- ½
Dublin Zone	1/3½	11½	9½
Rest of Irish Free State	1/4½	1- ½	10½

Wholesale prices in 2-gallon cans: Aviation and No. 1:1d, and No. 3:1½d per gallon above bulk prices except in Irish Free State and Northern Ireland where they are 2d per gallon more.

KEROSENE: Water white 8½d per gallon, and Standard White 7½d per gallon, in bulk, for London and home counties. Rest of England and Wales ½d per gallon more. Barrelled oil ex wharf 3d per gallon above bulk prices for both qualities of kerosene stocks.

GAS OIL: In rail tank car loads, i.e. 10 ton lots 3¼d per gallon and in smaller quantities of 1,000 gallons and upwards 3½d per gallon, net and naked, ex wharf.

LUBRICATING OILS: The following are the market quotations: American pales £9/10/- to £21/-/-, American reds £10/7/6d to £15/10/-, American dark cylinders £9/12/6d to £21/10/-, and American filtered cylinders £16/-/- to £19/12/6d per ton, less 2½ percent, barrels free, ex wharf.

FUEL OILS: Furnace fuel oil £3/7/6d per ton, in bulk, ex ocean installation, for inland consumption; for bunkers the price is the same, i.e. £3/7/6d per ton. Diesel fuel oil £4/-/- per ton, in bulk, ex ocean installation, for inland consumption; for bunkers the price is 2/6d per ton dearer, i.e. £4/2/6d per ton.

For contracts — furnace fuel oil £3/2/6d, and Diesel fuel oil £3/15/- per ton.

The foregoing information was supplied by Benjamin and Company of London.

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Fighting Price Cutters

(Continued from page 533)

in the United States, expresses very similar views. "We do not think that the third pump," says Mr. van Eck, "will accomplish permanent stabilization of the gasoline market. It imposes an additional burden on the oil industry by causing the expenditure of more morey in facilities of which there are already too many, making it so much more difficult to show profitable operation. The output of gasoline should not be increased by the manufacture of a third grade, great quantities of which can easily be produced, by creating further outlets and really encouraging the trade in cheaper grade products. The best policy is to improve quality and not destroy quality. To stabilize markets there should be a fixed relation between crude oil prices and wholesale prices of gasoline, and there should be a reasonable spread between wholesale prices and retail prices of gasoline. The introduction of third grade gasoline, with its inherent structure of unequal price differentials, is likely to stand in the way of permanent stabilization."

J. Howard Pew, president of the Sun Oil Company, sums up the situation from the angle of his company in a few terse words: "Our business has been built on one high-grade product, and we have no intention of changing this policy. In general we view the third grade as an agency certain to destroy the good will and existing brand of any one adopting it extensively."

W. T. Holliday, president of the Standard Oil Company of Ohio, states that his company is not marketing a third grade and has no views to express on the subject.

Cities Service Company, whose gasoline marketing facilities have shown considerable expansion during recent years have installed the "fighting pump" only in districts where competition is particularly severe. According to the company's statement, its sales of motor spirit, both retail and wholesale, have increased more than 40 percent during the first half of 1931 over the similar period of 1930.

Since its introduction, only a few months ago, the third pump has spread rapidly in sections where price competition had become a chronic evil. Those who advocate its use maintain that it offers the only practical means by which legitimate sales organizations can meet the habitual price cutter on his own ground without incurring ruinous losses by selling their high grade brands on a cut rate basis. They point out that the price cutting dealer must depend on a large volume of sales to realize a profit and that consequently anything that cuts down his gallonage adds to the difficulty of his operations. They maintain also that there is a psychological factor in favor of the third grade gas. When the buyer sees that organizations backed by an established reputation are willing to sell as cheaply as the irresponsible price cutter, their argument runs, he will prefer to buy from the well known companies and will continue to patronize their stations. If he does this there is a good chance that after trial of the cheaper grade he will return to the use of gasoline of guaranteed quality, whereas if nothing is done meet the price cutter's offers many customers will be permanently lost to the companies who confine themselves to the higher grades.

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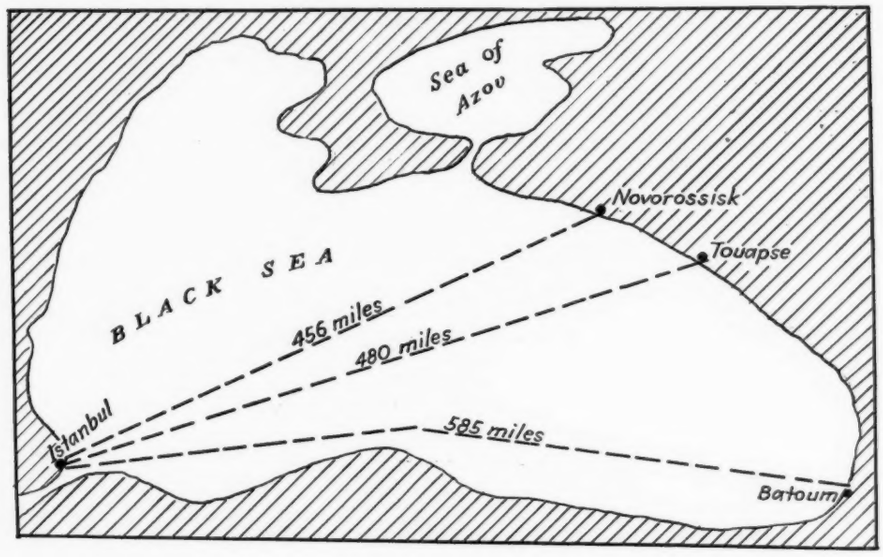

EXAMPLES OF DISTANCES FROM NOVOROSSISK TO LEADING PORTS

Port Said	1247 miles	London	3574 miles
Bombay	4293 miles	Hamburg	3881 miles
Genoa	1768 miles	Rotterdam	3630 miles

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REPRESENTATIVES OF THE SOYOUZNEFTEEXPORT (MOSCOW)

ENGLAND . . "Russian Oil Products, Ltd."

GERMANY—"Deutsch-Russische Naphta G.m.b.H." (Derunapht)
"Derop" Deutsche Vertriebs-Gesellschaft für russische Oelprodukte, A.G.

FRANCE . . . "Société des Produits du Naphte Russe."

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